
Project	Financial Instruments: Replacement of IAS 39 Amortised Cost and Impairment –
Topic	Decoupling and allocation of subsequent EL revisions

Introduction

Background

1. In previous meetings the Board has started to consider how to address the comments and other feedback received on the exposure draft *Financial Instruments: Amortised Cost and Impairment* (the ED).
2. In summary, the feedback received was that almost all respondents agreed with a more forward-looking impairment approach, but that the expected cash flow model proposed in the ED was operationally difficult.
3. As noted in previous papers, the staff (as well as some respondents) believes that the model proposed in the ED faithfully represents the underlying economics included in the pricing of financial instruments and is consistent with the IFRS amortised cost measurement method. However, the staff believe the Board needs to consider how the proposed approach should be altered to address the significant operational challenges identified. Most notably, with open portfolios. That is the starting point for the Board discussions. Any specific issues for individual financial assets will be addressed after a general impairment model for open portfolios has been developed.
4. Based on the feedback received, the following ‘roadmap’ has been prepared for use during redeliberations. The Board has already discussed the top portion of the diagram and various aspects of the ‘Allocation of initial EL estimate’ layer.

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

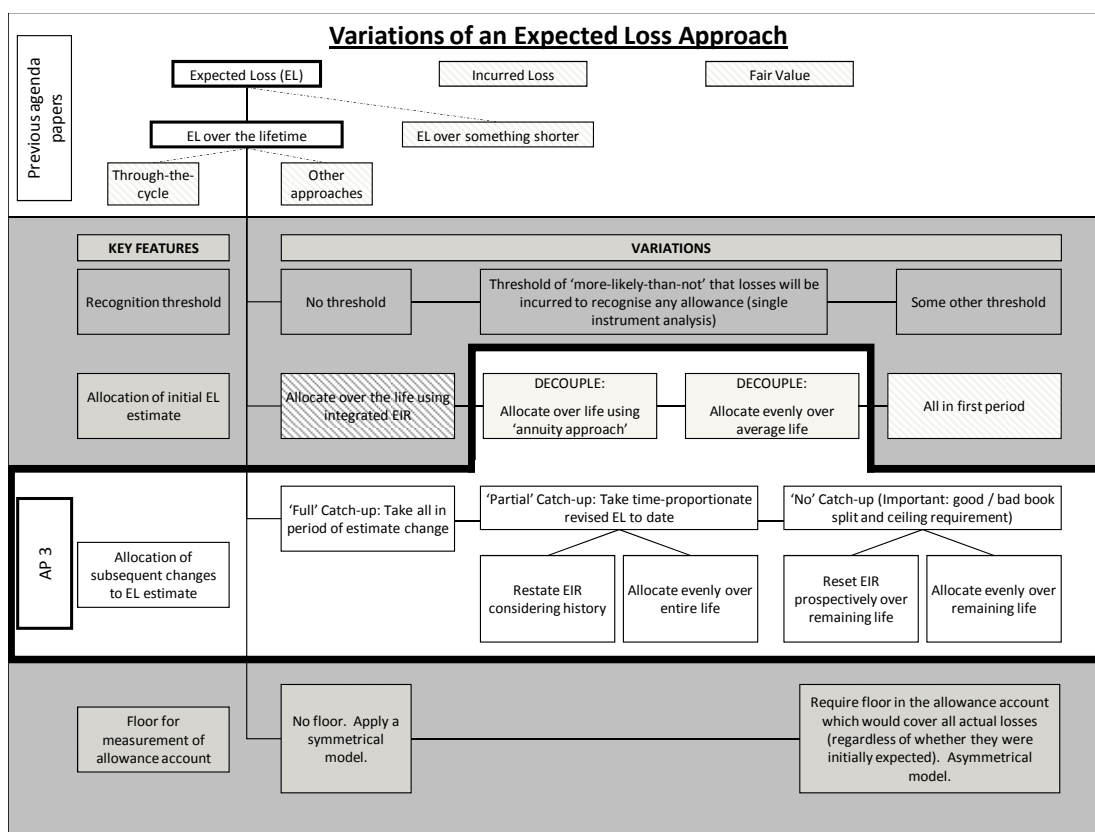
The views expressed in this paper are those of the staff preparing the paper. They do not purport to represent the views of any individual members of the IASB.

Comments made in relation to the application of an IFRS do not purport to be acceptable or unacceptable application of that IFRS—only the IFRS Interpretations Committee or the IASB can make such a determination.

The tentative decisions made by the IASB at its public meetings are reported in *IASB Update*. Official pronouncements of the IASB, including Discussion Papers, Exposure Drafts, IFRSs and Interpretations are published only after it has completed its full due process, including appropriate public consultation and formal voting procedures.

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5. To date, tentative decisions made during redeliberations are to proceed with developing an approach that:
 - (a) is based on lifetime expected loss (EL);
 - (b) considers all reasonable and supportable information (including forecasts of future conditions) when calculating EL;
 - (c) allocates the initial EL estimate over the lifetime; and
 - (d) uses a non-integrated (ie ‘decoupled’) approach when allocating the lifetime EL and recognising interest revenue.



Purpose of this paper

6. This paper is meant to provide information on the *mechanics* and particular unique implications of various decoupling methods with allocating EL estimates. This paper does not ask the Board to make any decisions. However, it will form the basis for a future paper that will include the staff analysis and recommendation on these issues as well as questions to the Board.

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Contents of paper

7. This paper continues the discussion related to the ‘roadmap’ above and considers two main things:
 - (a) ‘decoupled’ approaches to allocate expected loss estimates (ie ‘Decouple’ boxes in ‘roadmap’); and
 - (b) use of a ‘partial’ or ‘no’ catch-up approach for the effects of changes in the EL estimates (ie ‘Allocation of subsequent changes to EL estimate’ layer).
8. Agenda paper 4B presented at the 3 August 2010 Board meeting describes each of the layers of the roadmap and its key features. Paragraphs 8-11 of that paper and 18-25 of the EAP summary (reproduced in Appendix A herein) describe two ways of decoupling which will be further discussed below.
9. Once a decoupled approach is used for initial EL estimates, then it is also used for the effects of revisions to EL estimates.
10. It is important to note that using a ‘decoupled’ approach for allocating the *initial* EL estimates does not by itself eliminate the operational difficulty of applying the ED’s model to open portfolios.
11. Why? Because in an open portfolio, an EL estimate is made at each assessment date. That EL estimate is (obviously) forward-looking for the assets in the portfolio at the assessment date. In effect, the EL estimate consists of (a) EL estimates on new assets, and (b) revised EL estimates for old assets. Without maintaining initial EL estimates for each individual asset (which would mean we can no longer use open portfolios), it is not possible to differentiate between (a) and (b).
12. The ‘full’ catch-up method proposed in the ED would require such differentiation which causes the operational difficulties. Therefore, the discussion in this paper focuses on other approaches (eg ‘partial’ or ‘no’ catch-up) to dealing with the effects of changes in EL estimates. Because we would not differentiate between (a) and (b) to address some operational difficulties, the approaches described below would not necessarily approximate the ED’s model.

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13. The paper also discusses unique considerations for a ‘partial’ or ‘no’ catch-up approach. Namely:
 - (i) ceiling requirement¹; and
 - (ii) ‘good’ book / ‘bad’ book considerations.
14. Appendix C illustrates the *mechanics* of the ‘decoupled’ approaches discussed below including how a ‘partial’ or ‘no’ catch-up might be used in those approaches.
15. The approaches and methods discussed below reflect some of the feedback received during outreach activities and through comment letters. Keep in mind that the methods described represent *specific* ways for how to use a decoupled approach, calculate a catch-up, transfer assets / allowance between a ‘good’ and ‘bad’ book, etc. There may be other ways as well.

‘Decoupled’ approaches

16. ‘Decoupling’ refers to the process of keeping the EIR calculation (as in IAS 39 *Financial Instruments: Recognition and Measurement*)) separate from an EL estimate and recognition of credit losses.
17. We have learnt from the EAP that ‘decoupling’ can be applied in two broad ways:
 - (a) **Linear**: eg estimate EL and then allocate it using a straight-line method over the average life of the portfolio;
 - (b) **Non-linear**: eg perform a separate discounted cash flow calculation on the EL, convert that amount to an annuity and use that to allocate the EL over the life of the instrument (the ‘annuity’ approach).

¹ The possibility of requiring some sort of floor will be discussed in a future paper.

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The straight-line approach – a linear method

18. This type of method for ‘decoupling’ would determine the EL estimate and allocate it over the weighted average life of the portfolio linearly. For example, if the weighted average total life of the open portfolio is 5 years, the initial EL estimate would be allocated as one-fifth each year. See illustration in Appendix C.
19. A linear approach may be useful in practice because of its relative *calculation* simplicity (compared to an ‘annuity’ approach, for example), and its ability to use undiscounted amounts. However, such an approach does not capture all aspects of the timing of losses and may have limitations regarding the ability to faithfully represent more complex scenarios.
20. In some situations, a linear method may approximate to the allocation pattern (for initial EL estimates) that would be obtained under an integrated EIR approach. In other situations (for example, an irregular loss pattern, high interest rates), it may not.

The ‘annuity’ approach – a non-linear method

21. As described in agenda paper 4B of the 3 August 2010 Board meeting, an ‘annuity approach’ would require performing a separate discounted cash flow (DCF) calculation on the EL estimate to determine a present value of the EL estimate. That amount is then transformed into an annuity, allocated over the weighted average life of the portfolio and recognised in profit or loss as a periodic charge (including the notional interest related to an annuity).
22. For example, after determining the present value of the EL estimate, one year of the annuity amount would be allocated to profit or loss for the period (including the notional interest related to the annuity balance). See illustration in Appendix C.
23. Since the annuity method is a flexible tool rather than a particular impairment model, the risk-free or any other reasonable rate (eg risk-free rate—to which a spread could be added) could be used to perform the DCF calculation. The closer the discount rate used in the DCF calculation is to the integrated EIR that

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would have been calculated in the ED's model, the closer the approximation (for allocating initial EL) to the approach proposed in the ED.

Approaches for EL estimates in an open portfolio

24. As mentioned above, when using an open portfolio, it is not possible to distinguish between (a) EL estimates on new assets, and (b) the effects of changes in EL estimates for old assets (at least not in an operationally viable way). Unless a 'day-1 loss' is recognised for the initial EL estimate, all forms of a 'full' catch-up approach for the effects of subsequent changes in EL estimates would require distinguishing between (a) and (b).
25. So, if we wish to permit the use of open portfolios (in an operationally viable way), we need to find some way other than a 'full' catch-up to deal with EL estimates at each reporting date.
26. There are two broad approaches that were discussed by the EAP and suggested by respondents to the ED:
 - (a) 'Partial' catch-up; or
 - (b) 'No' catch-up.
27. From the outreach activities, we were advised that both broad approaches are operationally feasible when using an open portfolio.
28. Both approaches could use either of the 'decoupling' methods discussed previously:
 - (a) straight-line approach (ie a linear method); or
 - (b) 'annuity' approach (ie a non-linear method).
29. The example in Appendix C illustrates the mechanics of these linear and non-linear methods including 'partial' and 'no' catch-up.

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'Partial' catch-up

30. Under a 'partial' catch-up approach, the EL estimate is made at the end of each period for the assets in the portfolio at that date. That EL estimate is then allocated over the *total* life of the portfolio with recognition of EL to the extent that reflects its age (ie the life-to-date). In other words, a *target level* of the allowance account is calculated and profit or loss is adjusted to obtain that target level.
31. The current period profit or loss would be adjusted for the amount that would have been otherwise recorded up through the current period had the revised estimate been the initial estimate. The remaining difference (if no further revisions of estimates were required) would be allocated over the remaining life of the portfolio.
32. In an open portfolio, it would be rare for no revisions of estimates to occur each period. So the amount being allocated in the current period would always include some catch-up amount, as opposed to simply the continuing effects of a previous EL estimate (ie the allocation pattern reflecting such a previous estimate).

Allocate 'partial' catch-up linearly

33. In order to determine the 'partial' catch-up under a linear (eg a straight-line) method, the weighted average age (or some proxy) of the portfolio (ie how many years you are into the portfolio) should first be calculated based on the activity of loans being issued and repaid / removed from a portfolio.
34. Once that age is calculated, the proportionate amount of that average age to the weighted average life of the portfolio is applied to the total EL estimate.
35. For example, if an open portfolio is deemed to have a weighted average age to date of 2 years, and has a weighted average total life of 5 years, the required allowance account level would be equal to two-fifths of the EL estimate, and profit or loss would be adjusted accordingly. See Appendix C for an illustration.

Allocate 'partial' catch-up non-linearly

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36. When using a non-linear (eg ‘annuity’) method, a ‘partial’ catch-up could also be determined based on the weighted average age of the portfolio to date.
37. In one non-linear method, an annuity is first calculated based on the present value of the revised EL estimate. Then that annuity would be accumulated, including notional interest, to determine the allowance target balance and profit or loss impact for the period. For example, if an open portfolio is deemed to have a weighted average age of 1.5 years, the target balance is the total of applying the annuity for 1.5 years (ie one complete annuity charge with notional interest for 6 months plus a 6-month accrual of an annuity charge).
38. See illustration in Appendix C.

‘No’ catch-up

39. Under a ‘no’ catch-up approach, the EL estimate is made at the end of each period for the assets in the portfolio at that date (as in the ‘partial’ catch-up approach).
40. That EL estimate is allocated over the current and future periods, for example, by reference to the average life of the portfolio. No consideration is given to the amount of time that has passed in the portfolio; the revisions are allocated only over current and future periods.

Allocate ‘no’ catch-up linearly

41. Under a ‘no’ catch-up approach, if allocating the amount in a linear fashion (eg straight-line), the equivalent EL amount of one period of the total average life of the open portfolio is taken in the current period (as illustrated in the example in Appendix C).

Allocate ‘no’ catch-up non-linearly

42. Alternatively, the ‘no’ catch-up could be treated non-linearly by calculating the annuity. The one period equivalent of that amount is then taken in the current period. For example, in a portfolio with an average life of 5 periods, the annuity would be calculated based on a 5-year accumulation period and recognised in profit or loss during the period.

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43. See illustration in Appendix C.

Unique considerations with ‘no’ catch-up approach

44. As described in paragraphs 24-30 of agenda paper 4B presented at the 3 August 2010 meeting (and included in Appendix B for reference herein), additional issues must be considered when using a ‘no’ catch-up approach:

- (a) whether a ceiling is necessary (see Appendix C); and
- (b) special considerations when using a ‘good’ book / ‘bad’ book approach.

Ceiling requirement

45. The ‘no’ catch-up approach described herein allocates the EL estimate over the current and future periods. There is no target balance, nor any consideration given for amounts already recorded or time elapsed.
46. Therefore, as described in paragraph 30 of agenda paper 4B (see Appendix B), a situation could arise when the total amount of EL recognised to date could be greater than the total EL estimated for the life of the portfolio. In such situations, a ceiling (ie limit) on the total allowance balance would be necessary so that the allowance balance was not overstated.
47. Appendix C illustrates when such a ceiling might be required. As shown in that example, a ceiling of the total EL is only necessary in some possible form of a ‘no’ catch-up approach. A ‘partial’ catch-up is always adjusting the allowance account to be a life-to-date proportion of the total EL estimate. So, under such an approach, a ceiling would not be necessary because the proportionate amount would never be greater than the total expectation at the end of the life.

‘Good’ book / ‘bad’ book considerations

48. As described in agenda paper 4B (Appendix B), we understand that many entities currently manage their business by keeping performing loans in a ‘good’ book and nonperforming loans in a ‘bad’ book.

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49. Nonperforming loans in the ‘bad’ book are typically managed more closely and on a more frequent basis than the ‘good’ book. Because they are considered ‘bad’ loans, in order to fully provide for the ‘bad’ loans some have suggested that the entire EL estimate for such loans should be recognised immediately at each reporting date.
50. If a ‘good’ book / ‘bad’ book approach is used, there are two questions that need to be considered:
- (a) *When* should loans (and the related allowance) be transferred to the ‘bad’ book?
 - (b) *How much* of the allowance needed for the ‘bad’ book should be transferred out of the ‘good’ book?
51. (Note that the model in the ED required a ‘full’ catch-up for the effects of all changes in EL estimates (ie 100% of the effects of EL estimate changes would be recognised in the current period regardless of whether the loans are in a ‘good’ or ‘bad’ book). Therefore the questions of ‘*When*’ and ‘*How much*’ are irrelevant under a ‘full’ catch-up approach.)
52. Different UUUways of addressing the question of ‘*When*’ will not be presented in this paper – although we will summarise some implications for different ‘catch-up’ methods. (We will discuss different ways of addressing ‘when’ in later papers, if relevant).
53. There are at least two possible broad approaches for determining ‘*how much*’ allowance to transfer:
- (a) **Total transfer.** This approach would require depleting the allowance in the ‘good’ book for the entire amount necessary for the allowance needed on the ‘bad’ book. If the allowance in the ‘good’ book is not sufficient to transfer an appropriate amount for the ‘bad’ book, then an additional loss would be recorded for the ‘bad’ book in the same period of the transfer (against profit or loss).
 - (b) **Proportionate transfer.** This approach would require transferring just the portion of the allowance built up for the nonperforming loans in the

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‘good’ book up to their transfer to the ‘bad’ book. For example, if 10% of the loans² in the ‘good’ book need to be transferred to the ‘bad’ book and need to be fully reserved, then 10% of the balance of the ‘good’ book allowance would also be transferred to the ‘bad’ book. The remaining amount needed to cover the ‘bad’ book allowance would be recognised in profit or loss in the current period in its entirety.

54. **‘Partial’ catch-up.** Under a ‘partial’ catch-up approach, the question of *‘how much’* is irrelevant (as was the case in the ED approach). This is because the ‘good’ book allowance would be adjusted to the target balance and 100% needed for the ‘bad’ book would be recognised in the current period. So the effect on profit or loss for the future and current periods would be the same regardless of the amount transferred between books (however, the effect on profit or loss would be less in the current period than under a ‘full’ catch-up).
55. However, the question of *‘when’* becomes more important because keeping a ‘bad’ loan in the ‘good’ book would permit the effects of the revised EL estimate to be allocated over a time period. Whereas, moving it to the ‘bad’ book would require the effects of the revised EL estimate to be recognised immediately. So, the sooner the transfer to the ‘bad’ book, the sooner the losses are recognised.
56. **‘No’ catch-up.** Under a ‘no’ catch-up approach, both questions of *‘how much’* and *‘when’* are important.
57. The ‘no’ catch-up approach does not calculate a target allowance balance. The effects of the revisions to the EL estimate in the ‘good’ book are allocated over the current and future periods, whereas the ‘bad’ book has all EL recognised in the current period. The effect on profit or loss will be different depending on *when* items are transferred between the ‘good’ and ‘bad’ book, and *how much* is transferred between the ‘good’ and ‘bad’ book.
58. The following table summarises the above paragraphs:

² Weighting by volume/nominal amount and tenure might apply.

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‘Good’ book treatment and effect on profit or loss			
	‘Full’ catch-up	‘Partial’ catch-up	‘No’ catch-up
‘When’ to transfer between ‘good’ and ‘bad’ book?	Irrelevant	Makes a difference	Makes a difference
‘How much’ to transfer between ‘good’ and ‘bad’ book?	Irrelevant	Irrelevant	Makes a difference

Closing

59. No decisions are requested during this meeting. However, the discussion provided above, and the illustration in Appendix C will be used in future papers when decisions are requested on topics including, but not only:
- (a) Should a particular decoupling approach be mandated?
 - (b) Should the ‘partial’ catch-up, ‘no’ catch-up, or another method be mandated for accounting for EL estimates?
 - (c) Should a good/bad book approach be used and, if so, should the total allowance or a proportionate allowance be moved with ‘bad’ loans to the ‘bad’ book?
60. Determining the total life as well as the age of a portfolio also involves operational issues. These will be analysed depending on the direction the Board decides on.

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Appendix A – Extracts from AP 4B – paragraphs 8-11 and EAP Summary – paragraphs 18-25*Agenda Paper 4B – Decouple the EIR*

8. One method of decoupling the EIR is to use an ‘annuity approach’. As described in paragraphs 18-21 of the EAP Summary paper included on the website (and reproduced in Appendix A for convenience), such an approach would require performing a separate DCF calculation on the EL to determine a present value of the EL. That amount is then transformed into an annuity, allocated over the life of the instrument and recognised in profit and loss as a periodic charge. The annuity approach can be applied in a way that results in a very close approximation to the proposed integrated EIR approach outlined in the ED.
9. Another suggested method for ‘decoupling’ is to determine the EL and allocate it over the life of the instrument using a straight-line method (see paragraphs 22-23 of the EAP summary included in Appendix A). Such a method may be useful in practice, albeit not as accurate as an integrated EIR or an annuity approach for allocating the initial EL. Even so, this method could provide a reasonable approximation to the ED.
10. Operationally, both these ‘decoupled’ methods are simpler than an integrated EIR calculation because they separately source the risk data from the accounting data.
11. However, as with the current proposal, these methods would still require carrying forward historical data (ie the initial annuity or EL) for purposes of determining the amount to be recorded when estimates change in the future. If a different variation of the key feature ‘allocation of subsequent changes in EL estimate’ (see below section) is used, the concern around carrying forward historical data may be alleviated.

EAP Summary – Annuity and Straight-line approaches

18. Under the **annuity approach to EL measurement**, a separate discounted cash flow (DCF) calculation is used for EL. This DCF calculation is used to allocate the initial EL over the life of the instrument by converting the present value of the EL into an annuity, which is recognised in profit or loss (as a periodic charge).

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Subsequent changes in EL result in an adjustment to the present value of EL, which is immediately recognised in profit or loss.

19. We learnt that this approach is flexible and can be applied to a wide range of instruments, including:

- fixed rate bullet loan or bond;
- amortising fixed rate loan;
- floating rate loan; and
- credit commitment (with fixed periodic fee).

20. One advantage of this approach is that it also works for loan commitments, where an internal rate of return (IRR) calculation often does not work. The approach would also significantly simplify the approach for floating rate loans.

21. We also learnt that under the annuity approach the calculation of the annuity can be simplified in the following scenarios:

- for financial instruments with a single period cash flow or with a maturity of one year or less (e.g. overdrafts, short-term revolving facilities and letters of credit), the annuity amount charge is equal to or can be approximated by the undiscounted EL;
- for financial instruments with multi-period cash flows that have constant conditional periodic credit losses the annuity is the periodic credit loss;
- if the expected loss EL is not expected to change markedly (i.e. remain stationary) over the remaining life of the portfolio, the annuity can be approximated by the (geometric or simple) average loss; and would approximate the annuity charge; and
- for EL patterns that either have a constant growth rate or that change linearly over time the annuity can be determined using a closed form solution.

22. Under the **simplified approach using three building blocks for EL**, the calculation is disaggregated into the following three building blocks:

- allocation of initial EL;

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- an experience adjustment (ie the difference between actual cash flows/losses and the last estimate for the current period); and
- adjustment for changes in future expectations.

This approach uses EL as an indirect way of determining the amortised cost carrying amount and hence does *not* need any explicit, direct estimate of expected cash flows.

23. We learnt that this simplified approach provides a good approximation for the following types of instruments:

- bullet loans and amortising loans;
- fixed and floating rate instruments; and
- changes in credit loss expectations and changes in forward rates.

24. However, we also learnt that both of the above approaches would still require carrying forward historical information from the date of initial recognition (the initial EL), which is difficult for most systems (see paragraphs 26 to 39 below discussing ‘open portfolios’). Hence, any approach that involves retaining a link to the past, whether the initial cash flow estimate or the initial EL, amplifies the operational challenges. This would be particularly difficult in the context of transition requirements if those were to require reconstructing historical data.

25. The EAP presented a prospective approach, dealing with expected loss without linking to past data, that would be more operationally expedient.

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Appendix B – Extract from AP 4B – paragraphs 24-30***Interaction of good book / bad book with ‘catch-ups’***

24. We understand that many entities manage their assets using a good book / bad book approach. Performing assets are kept in the ‘good’ book. Non-performing assets are in the ‘bad’ book.
25. We have heard that non-performing assets are typically managed more actively (and frequently on an individual basis) with more detailed analysis performed on those assets. Conversely, statistical approaches at portfolio level are typically applied for the performing assets. For these reasons, respondents have suggested that different methods for allocating subsequent changes in estimates should be used for the good book versus the bad book. The bad book would always have a ‘full’ catch-up (see paragraph 26(b) below). The good book would get the ‘full’, ‘partial’, or ‘no’ catch-up described above.
26. Two different ways the allowance recognised on the good book for EL could be transferred with a bad loan to the bad book are:
 - (a) The entire allowance needed to cover the losses on the bad loan is transferred from the good book to the bad book.
 - (b) A proportionate amount of the good book allowance that reflects the part that has been recorded to date for that bad loan should be transferred to the bad book. However, the bad book would require an additional allowance amount to be recorded in order to fully provide for the bad loan (this would be akin to a ‘full’ catch-up for the bad book).
27. The question of how/when to move allowances between good and bad books is not important when using a ‘full’ or ‘partial’ catch-up method. The effect on profit or loss will be the same within either catch-up method (although obviously different between the methods) regardless of whether the full allowance or a proportionate allowance is moved to the bad book.
28. However, when applying a ‘no’ catch-up for good book method to the allocation of subsequent changes in EL estimates, the question of when/how to transfer the allowance becomes more important. If one kept the non-performing loans in the good book and only revised the estimated EL, one could allocate the changes in

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estimate over future years, instead of taking the 'full' catch-up if moved to the bad book.

29. In addition, depending on whether you transfer a proportionate amount of the loss to the bad book or the entire loss affects the amount recorded in profit or loss for the period. When transferring the entire allowance needed to the bad book and allocating any revised estimate for the good book over the life, the effect on profit or loss would generally be lower than if just a proportionate amount was transferred and a 'full' catch-up on the bad book was recorded.
30. Another unique issue to the '*no catch up for good book*' method relates to applying the straight-line method to an open portfolio. For an open portfolio of 5-year loans, '*no catch-up for good book*' would require an entity to record 1/5 of any change in estimate for the remaining life of the portfolio. If estimates on that open portfolio continue to change, 1/5 of the change is continually added to the allowance balance. This could result in a situation where the allowance balance grows so much that is greater than the total of EL and actual (incurred) losses for that portfolio. Because of that scenario, a ceiling would need to be put in place when using the '*no catch-up for good book with a straight-line allocation*' method. Such a ceiling could be the sum of the expected losses and the actual (incurred) losses.

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Appendix C – Example: ‘Partial’ and ‘No’ Catch-up, including ceiling

- C1. The following **extracts** from an example compare the ‘annuity’ and straight-line methods for a decoupled approach (as described in this paper).
- C2. The extracts also show when a ceiling may be needed when using a ‘no’ catch-up approach.
- C3. This extract is **only** meant to show the mechanics of two possible decoupling methods using a ‘partial’ or ‘no’ catch-up approach as described in the paper. The interactions with a ‘good’ book / ‘bad’ book are not meant to be shown in this extract.
- C4. These extracts are based on the same fact pattern using an open portfolio. The assumptions are shown in the top table and include:
- (a) a weighted average life of 4 years for the open portfolio;
 - (b) discount rate, when needed (ie for the annuity approach), of 7%; and
 - (c) principal is assumed to be issued at the beginning of the period and write-offs occur at the end of the period, so the loans are outstanding the entire period.
- C5. The calculations shown and described below are only *one* way of applying these approaches.
- C6. Column J represents the allowance balance calculated before applying any ceiling. It considers the allowance (after applying any ceiling requirement) from the previous period, write-offs that would be taken against that previous balance, the current period allocation, and for the non-linear method it also includes the notional interest calculated on the previous period’s allowance including the ceiling.
- C7. Column N represents the actual allowance that would be on the balance sheet at the end of the period which considers the ceiling requirement.
- C8. Column O represents the provision expense for the period. It considers the EL allocation for the period, any additional provision expense needed for write-offs because the prior period allowance didn’t cover all write-offs, and the release of any excess allowance over the ceiling amount.

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C9. Column P under the **straight-line approach** represents the target allowance balance needed at the end of the period. It is calculated based on the weighted average age (Column G) and the EL allocation (Column I).

C10. Column P under **the ‘annuity’ approach** (ie bottom right corner of the table) represents the target allowance balance needed at the end of the period. This amount is based on the weighted average age (Column G) and the calculated annuity based on present value of the EL at the end of the period (Column I) and takes into consideration the notional interest on the annuity using the discount rate of 7%.

C11. Column Q represents the profit or loss impact for the period under a ‘partial’ catch-up approach. It is the difference between the previous and current period’s allowance balance plus any additional expense for write-offs that were not covered by the allowance balance.

Assumptions								
Both partial and no catch-up							Partial catch-up	
Time	Principal issued	Principal repaid	Write-offs	Principal Outstanding	EL at EOL	WAL	Wtd Avg Age	PV of EL
	A	B	C	D = A + B + C	E	F	G	H
4				7,400,000	650,000			
5	1,500,000	-1,400,000	-150,000	7,350,000	750,000	4	1.91	572,171
6	1,000,000	-850,000		7,500,000	550,000	4	2.53	419,592
7	750,000	-4,750,000	-250,000	3,250,000	275,000	4	2.23	209,796
8	600,000	-1,400,000	-100,000	2,350,000	175,000	4	2.17	133,507
9	1,000,000	-1,000,000		2,350,000	177,500	4	1.89	135,414
10	500,000	-750,000		2,100,000	160,000	4	2.05	122,063
11	800,000	-500,000	-100,000	2,300,000	200,000	4	2.09	152,579
12	900,000	-750,000	-250,000	2,200,000	190,000	4	1.82	144,950
13	1,250,000	-500,000	-100,000	2,850,000	212,500	4	1.81	162,115
14	1,000,000	-700,000	-150,000	3,000,000	220,000	4	1.92	167,837

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	'No' Catch-up								'Partial' Catch-up		
	Ceiling?										
	Time	EL Allocation	Notional Interest	Allowance (before ceiling)	Needed?	Ceiling Amount	Remainder after ceiling	Total allowance (ceiling)	Provision Expense	Allowance balance	Provision expense
				J	K J>E = Yes J<E = No	L	M	N	O		
Linear (eg Straight-line) Approach	8			100,000	No	-	-	100,000		94,947	
	9	44,375	N/A	144,375	No	-	-	144,375	44,375	84,029	-10,918
	10	40,000	N/A	184,375	Yes	160,000	24,375	160,000	15,625	81,905	-2,124
	11	50,000	N/A	110,000	No	-	-	110,000	50,000	104,348	122,443
	12	47,500	N/A	47,500	No	-	-	47,500	187,500	86,364	232,016
Non-linear (eg 'Annuity') method	8			100,640	No	-	-	100,640		89,270	
	9	39,978	7,045	147,663	No	-	-	147,663	47,023	78,204	-11,066
	10	36,036	10,336	194,036	Yes	160,000	34,036	160,000	12,337	76,560	-1,644
	11	45,046	11,200	116,246	No	-	-	116,246	56,246	97,729	121,169
	12	42,793	8,137	50,931	No	-	-	50,931	184,685	80,257	232,528