In depth

IFRS 9 impairment: how to include multiple forward-looking scenarios

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Contents

Frequently asked questions

1. *Differentiating forward-looking information*

FAQ 45.63.1

Question:

IFRS 9 requires that impairment assessments:

- Are performed on individual financial instruments or collectively on groups of financial instruments with shared credit risk characteristics (IFRS 9 paragraph B5.5.5); and

- Consider reasonable and supportable information, including forward-looking information, that is relevant for the particular financial instrument or group of financial instruments being assessed (IFRS 9 paragraph B5.5.16).

Should forward-looking information, such as macroeconomic forecasts, be incorporated into expected credit losses differently; for example, on a portfolio by portfolio basis?

Solution:

Yes. When incorporating forward looking information, such as macroeconomic forecasts, into the determination of expected credit losses an entity should consider the relevance of the information (and the availability of more relevant information) for each specific financial instrument or group of financial instruments. This is because forward-looking information that is relevant for one financial instrument, may not be relevant, or as relevant, for other financial instruments depending on the specific drivers of credit risk. Thus, as noted by the IFRS Transition Resource Group for Impairment of Financial Instruments (ITG) in September 2015, forward-looking information needs to be differentiated when it is applied to different financial instruments or portfolios of financial instruments. In accordance with IFRS 9 paragraph B5.5.5, financial instruments should be grouped on the basis of shared credit risk characteristics. It is necessary to determine which information is relevant to the particular financial instrument or portfolio being assessed and how much weight to give that information, depending on the specific drivers of credit risk.

For example it may be the case that expectations about future levels of unemployment in a specific industry and specific region are only relevant to a sub-portfolio of mortgage loans in which the borrowers work in that industry in that specific region.

Conversely, if different financial instruments or portfolios being assessed share similar risk characteristics, then relevant forward-looking information should be applied in a comparable and consistent manner to reflect those similar characteristics.

2. Can ECL be calculated using a mixture of 12-month and lifetime ECL for different forward looking scenarios?

FAQ 45.72.2

Question:

An entity is determining expected credit losses (ECL) for a loan using multiple forward looking scenarios based on probability of default (PD). Should the entity calculate probability weighted ECL using 12-month ECL for each of those scenarios that would result in the asset being in stage 1 (that is, no significant increase in credit risk) and lifetime ECL for those scenarios that would result in the asset being in stage 2 (that is, there would be a significant increase in credit risk)?

Consider the following simplified example.

An entity has a loan that is sensitive to changes in future unemployment rates. The entity obtains forecasts of forward looking unemployment rates, which predicts that future unemployment could be:

- 2% (with a 20% likelihood of occurrence); or

- 4% (with a 45% likelihood of occurrence); or

- 5% (with a 35% likelihood of occurrence).

NB: All the numbers in this example are for illustrative purposes only and hence may not be realistic. For example, it is assumed that the likelihood of scenarios is the same when considering 12 month and lifetime PDs and that the loss given default for each scenario is the same for 12-month ECL and lifetime ECL, which may not be the case in practice. Also, the number of forward-looking scenarios that an entity would use in practice may differ from that in this illustrative example.

The entity may use various approaches for determining ECL, but in this case the entity ascertains and uses the following data, based on all relevant, reasonable and supportable information (including forward looking information), for each of the forward looking scenarios:

Future unemployment rates	Likelihood of scenario	12-m PD	Lifetime PD	Loss given default (LGD)	Exposure at default (EAD)	12-m ECL (12-m PD x LGD x EAD)	Lifetime ECL (Lifetime PD x LGD x EAD)
2%	20%	1%	2%	50%	CU1,000	CU5	CU10
4%	45%	4%	10%	55%	CU1,000	CU22	CU55
5%	35%	12%	32%	80%	CU1,000	CU96	CU256

The entity makes an assessment of whether there has been a significant increase in credit risk by considering the increase in lifetime PD since initial recognition. On this basis, it assesses that an increase to a current lifetime PD of 15% or higher represents a significant increase in credit risk.

The entity calculates probability weighted ECL using 12-month ECL for those scenarios that would not individually give rise to a significant increase in credit risk (that is, 2% and 4% future unemployment) and lifetime ECL for those scenarios that would individually give rise to a significant increase in credit risk (that is, 5% future unemployment). On this basis, the entity calculates ECL as CU101 ((CU5 × 20%)+(CU22 × 45%)+(CU256 × 35%)), being 12-month ECL for the scenarios in which future unemployment is 2% and 4% and lifetime ECL for the scenario in which future unemployment is 5%, weighted by the likelihood of the different scenarios occurring. Is this correct?

Solution:

No. IFRS 9 requires a two stage process:

- An entity first assesses whether there has been a significant increase in credit risk since initial recognition for the loan, by considering all the relevant factors, and their relative weighting, together. That assessment should take into account relevant forward looking information, possible future scenarios and their likelihood. Based on this, the entity ascertains whether the loan is in either stage 1 or stage 2.

- Secondly, the entity calculates ECL on either a 12-month ECL basis (if the loan is in stage 1) or lifetime ECL basis (if the loan is in stage 2); but not a mixture of the two. This is because a loan cannot be in both stage 1 and stage 2 at the same time.

In the above simplified example, the entity compares the current average lifetime PD, weighted by the likelihood of the different possible future scenarios, of 16.1% (($2\% \times 20\%$)+($10\% \times 45\%$)+($32\% \times 35\%$)) with the equivalent PD on initial recognition and assesses that there has been a significant increase in credit risk since initial recognition. In this case because the loan is in stage 2, the entity calculates the probability weighted ECL as CU116 (CU10 × 20%)+(CU55 × 45%)+(CU256 × 35%)), being the lifetime ECL for each of the scenarios weighted by the likelihood of each scenario occurring.

The principle in this FAQ (that for stage 1 assets, ECL is calculated using 12-month ECL for all scenarios and, similarly, for stage 2 assets, ECL is calculated using lifetime ECL for all scenarios) also applies to groups of loans that have shared credit risk characteristics. However, portfolios of loans may be sub-divided into smaller groups of loans with shared credit risk characteristics, using a 'top down' or 'bottom up' approach depending upon the specific circumstances, to determine whether each sub-group of loans is in stage 1 or stage 2.

3. How many forward looking macro-economic scenarios need to be considered in measuring ECL?

FAQ 45.72.4

Question:

IFRS 9 paragraph 5.5.17(a) requires an entity to measure expected credit losses (ECL) in a way that reflects an unbiased and probability-weighted amount that is determined by evaluating a range of possible outcomes.

As discussed in the December 2015 meeting of the IFRS Transition Resource Group for Impairment of Financial Instruments ('ITG') and the subsequent webcast issued by the IASB in July 2016, it is necessary to consider different forward looking macro-economic scenarios in IFRS 9 ECL. This is because there may be non-linear relationships between different forward-looking scenarios and their associated credit losses that materially impact ECL. This applies both in determining whether or not there has been a significant increase in credit risk and in measuring ECL.

An example of a non-linear relationship can be illustrated with a portfolio of residential mortgage loan assets where:

- If residential property values decrease by 10% then a 1% increase in expected loss is experienced, due to the significant remaining over-collateralisation; and

- If residential property values decrease by 20% then a 10% increase in expected loss is experienced, as significantly more loans become under-collateralised and experience losses.

Credit losses do not increase linearly as property values fall, they increase at a greater rate the further residential property prices fall. This is a 'non-linearity'.

As a result, using a single forward-looking economic scenario, for example a central economic scenario based on the most likely outcome (sometimes referred to as a 'base case') would not meet the objectives of IFRS 9 when there is a non-linear relationship between the different forward-looking scenarios and the associated change in (i) the risk of a default occurring and/or (ii) credit losses.

How many forward-looking macro-economic scenarios need to be considered in measuring ECL?

Solution:

Judgement is required to determine the appropriate number of scenarios that will capture material non-linearities. This will depend on facts and circumstances and will need to be periodically re-assessed. So whilst illustrative examples, such as those used in the December 2015 ITG papers, often use a base case, an upside scenario and a downside scenario, 3 scenarios is not necessarily an appropriate number.

Relevant considerations in determining an appropriate number of scenarios include:

- *Information available without undue cost and effort*: IFRS 9 requires information to be used in the calculation of ECL to the extent it is available without undue cost and effort. Available information will include an entity's own internal information such as historic loss data and any forecasts of potential future credit losses, as well as externally available information such as economist forecasts and, in some jurisdictions and industries, historic industry-wide loss statistics.

- *Representative scenarios*: IFRS 9 paragraph BC 5.265 states that when there are many possible outcomes, an entity can use a representative sample of the complete distribution for determining the expected value. It is therefore not necessary to model all possible scenarios, although those chosen should result in what is considered to be an unbiased measurement of ECL, and judgement will be required. Where an entity has portfolios in different geographies, the potentially different characteristics of those geographies should be considered in determining representative scenarios.

- *Understanding material non-linearities:* Determining which scenarios are representative of the complete distribution for the purposes of measuring ECL will depend on whether, and if so where, there are material non-linearities within the portfolios. To be representative, the chosen scenarios should capture these material non-linearities. Existing management information may help an entity to understand the non-linearities that exist in its portfolios. For example, whilst designed for the purposes of industry-wide banking supervision rather than direct use in accounting, the credit losses calculated in a bank's regulatory stress scenarios could help it understand where material non-linearities exist within its portfolios and therefore which types of scenarios should be considered to capture these.

- *Probability of occurrence:* More extreme scenarios such as stress scenarios may not need to be one of the chosen scenarios used in the ECL calculation, if their very low probability of occurrence means their inclusion within the chosen scenarios would not materially impact the resulting ECL provision on a probability-weighted basis. However, just because a scenario is extreme does not mean it can automatically be excluded from consideration.

- *Reasonable and supportable*: IFRS 9 only requires information to be used in the calculation of ECL if it is reasonable and supportable. However, just because there is uncertainty, or because judgement is required, does not necessarily mean that information is not reasonable and supportable.

- *Changing circumstances*: The number of scenarios required could vary over time. This could result from changes in factors such as:

  - Business mix, for example if an entity commences originating loans with a different risk profile, an additional scenario(s) may be required to capture new non-linearities that are only present in the new portfolio; or

  - Macro-economic environment, for example a worsening of the economic situation may have the effect that an additional 'down-side' scenario is required to capture non-linearities that previously did not need to be considered but which are now more likely to materially affect ECL.

As required by paragraph 35G of IFRS 7, financial statements should disclose how forward-looking information, such as forward looking macro-economic scenarios, has been incorporated into the determination of expected credit losses.

If the selection of representative forward looking macro-economic scenarios within the ECL estimate is a critical judgement, then the disclosures required by paragraph 125 of IAS 1 will also need to be provided.

4. How should weightings be determined for multiple macro-economic scenarios?

FAQ 45.72.5

Question:

IFRS 9 paragraph 5.5.17(a) requires an entity to measure expected credit losses (ECL) in a way that reflects an unbiased and probability-weighted amount that is determined by evaluating a range of possible outcomes.

When an entity has determined the scenarios to be used (refer to FAQ 45.72.4 – How many forward looking macro-economic scenarios need to be considered in measuring ECL?) consideration then needs to be given to determining the weightings to be applied to each of the scenarios selected.

How should these weightings be determined for multiple forward looking macro-economic scenarios?

Please note: this FAQ assumes that the approach taken to calculate ECL is to use discrete forward looking macro-economic scenarios rather than a Monte Carlo or other type of approach.

Solution:

IFRS 9 does not prescribe how to determine weightings, so different approaches are possible. Judgement will be required as the weightings assigned will depend on various facts and circumstances and will need to be periodically re-assessed.

Relevant considerations in determining the weighting to be applied to each selected scenario include:

- *Objective of weightings:* IFRS 9 paragraph BC 5.265 states that when there are many possible outcomes, an entity can use a representative sample of the complete distribution for determining the expected value of credit losses. When representative scenarios are selected they therefore represent a subset of the complete distribution of scenarios that could occur. Accordingly, each selected scenario should be given a weighting based on the sub-set of scenarios for which the outcome of that selected scenario (i.e. the loss arising, in the case of ECL measurement) is representative. As an example, consider a simplified example where all possible scenarios are placed in order of severity, with the 0th percentile scenario being the worst case scenario and the 100th percentile being the best case scenario, and the 10th percentile scenario is chosen as the 'downside' scenario. Within the constraints of the discrete scenarios already selected, if the loss arising in the 10th percentile scenario was considered to be representative of the loss arising for all scenarios between the 0th and 33rd percentiles (for example, as the loss profile is relatively flat between the 0th and 33rd percentile), then that scenario would be expected to be given a 33% weighting for ECL measurement in order to be unbiased as per 5.5.17 of IFRS 9, not a 10% weighting as might seem appropriate based only on the scenario being at the 10th percentile. This is discussed in more detail in the illustrative example presented at the end of this FAQ. As the selected scenarios are chosen to be representative of the complete distribution, the total of the weightings applied should be 100%.

- *Availability of information*: The information required to perform a theoretically 'perfect' calculation of weightings, such as the complete loss profile across all possible scenarios, will in practice very rarely, if ever, be available without undue cost or effort. For this reason, expert credit judgement will be required. However, just because there is uncertainty, or because judgement is required, does not necessarily mean that information is not reasonable and supportable or not available without undue cost or effort. In particular, some or all of the following information may be available without undue cost and effort, and can be used to assist an entity in determining appropriate weightings:

  – the entity's default and loss history;

  – peer or industry data on historic defaults and losses; and

  – the entity's own modelling of possible impacts of future scenarios on credit risk e.g. regulatory stress test modelling.

The extent of information available without undue cost or effort may also vary dependent on factors such as the relative sophistication of the reporting entity and how long the entity has been in existence/undertaken particular lending activities.

- *Periodic reassessment*: The different scenarios selected and the weightings applied to them will need to be reviewed and re-assessed at each reporting date or when conditions change (also refer to Considering scenarios and weightings together below). If the latest information that is reasonable and supportable continues to support the weightings used at the last reporting date, then it would be appropriate to leave the weightings unchanged. This might be the case, for example, when an entity prepares interim financial statements and there has been no significant change in the entity's circumstances or to the external macro-economic environment since its previous annual financial statements. When designing the overall approach to determining weightings on first adoption of IFRS 9, an entity should also consider what future developments will, or will not, cause the weightings to change, along with the analysis that will be produced to support this. This will help ensure a consistent approach can be applied on an ongoing basis.

- *Consider scenarios and weightings together*: Scenarios and weightings should be considered together. For example, if at a reporting date a more extreme scenario is selected, everything else being equal, it would be expected that the weighting applied would be lower. However, considering consecutive reporting dates, it should not be presumed that if the economic outlook is worsening then the weightings will also always need to be amended. For example, the weighting applied to a downside scenario could remain constant over time if the downside scenario selected is made more adverse.

- *ECL measurement and significant increase in credit risk*: The December 2015 meeting of the IFRS Transition Resource Group for Impairment of Financial Instruments ('ITG') clarified that consideration of multiple forward-looking macro-economic scenarios is relevant to both measurement of expected credit losses and the assessment of significant increases in credit risk. The approach taken to determining scenario weightings should therefore also consider both these elements.

- *Other disclosures*: If determination of the weighting to be applied to forward looking macro-economic scenarios within the ECL estimate is a critical estimate, then the disclosures required by paragraph 125 and 129 of IAS 1 will need to be provided.

Illustrative example

NB This example is intentionally simplified so as to illustrate the principle that scenario weightings should be based on the outcome arising from the selected scenario. It is not intended to provide a view on any other aspect of ECL calculation. It also assumes that all necessary information, in particular the complete loss profile, is reasonable and supportable and available without undue cost and effort, which in practice will rarely, if ever, be the case.

A bank holds a single loan asset and it is assumed that:

- All possible scenarios can be placed in order of severity, with the 0th percentile scenario being the worst case scenario and the 100th percentile being the best case scenario;

- Three scenarios have been justified as being appropriately representative of the complete distribution, being the 10th percentile (downside), 50th percentile (base case) and 90th percentile (upside) scenarios; and

- The appropriate stage for the loan has already been determined taking account of the impact of multiple scenarios and forward looking information.

To calculate the ECL taking account of multiple scenarios, each selected scenario is given a weighting based on the sub-set of scenarios for which the outcome arising in that selected scenario (i.e. the loss) is representative.

Therefore;

- If the loss arising in the 10th percentile downside scenario of 95 is considered to be representative of the losses arising in all scenarios between the 0th and 34th percentiles (where losses range between 100 and 62), then that scenario would be given a 34% weighting;

- If the loss arising in the 50th percentile base case scenario of 30 is considered to be representative of the losses arising in all scenarios between the 34th and 57th percentiles (where losses range between 62 and 16), then that scenario would be given a 23% weighting; and

- If the loss arising in the 90th percentile upside scenario of 2.5 is considered to be representative of the losses arising in all scenarios between the 57th and 100th percentiles (where losses range between 16 and 0), then that scenario would be given a 43% weighting.

This is illustrated diagrammatically below, along with the full loss profile:
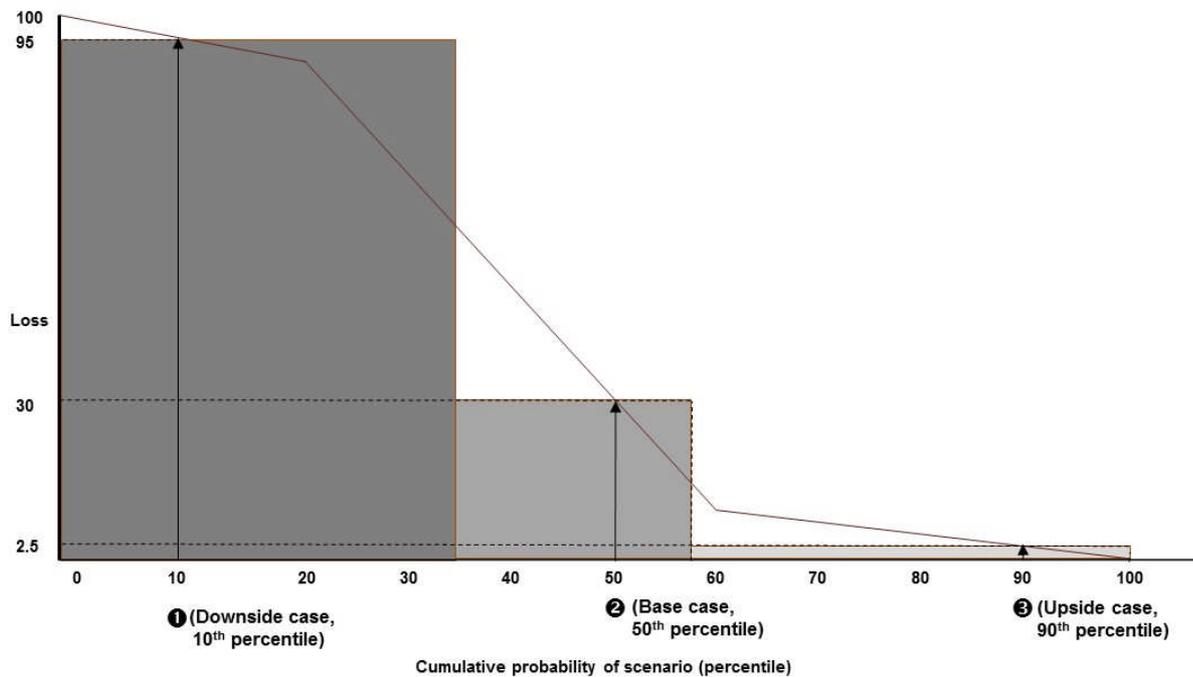
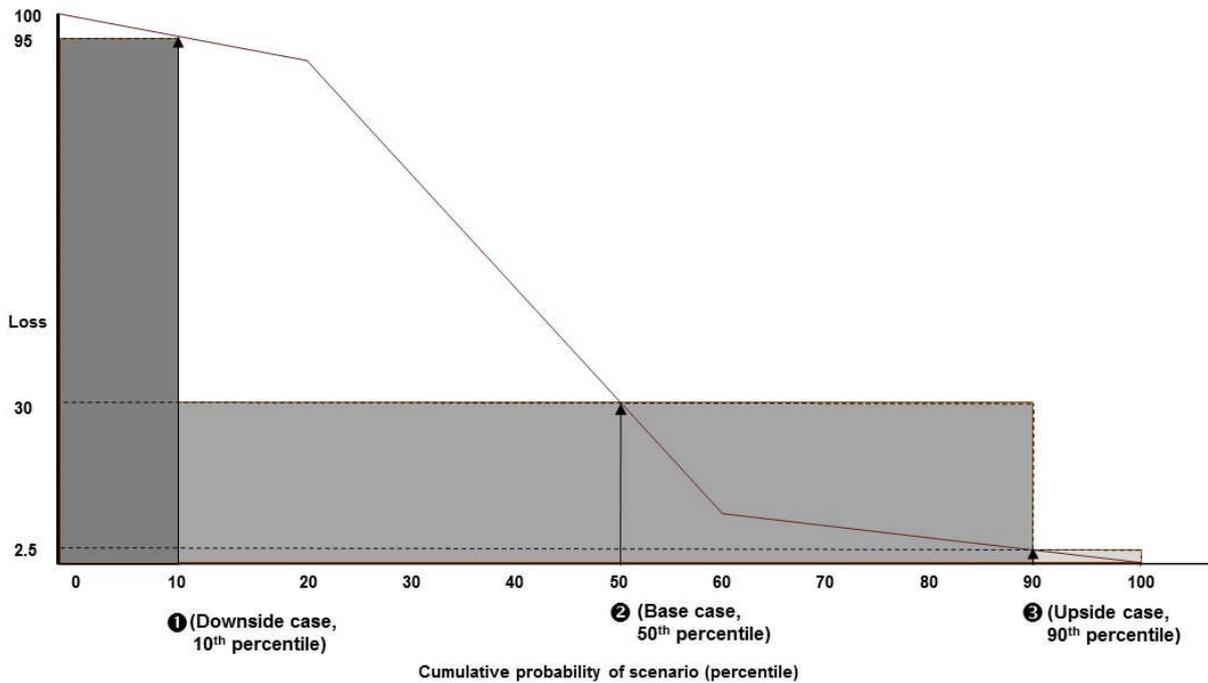Using this approach, the ECL would be estimated as being the sum of:

- 95 (loss in downside scenario) × 34% weighting = 32.3

- 30 (loss in base case scenario) × 23% weighting = 6.9

- 2.5 (loss in upside scenario) × 43% weighting = 1.1

This gives an estimated ECL of 40.3 which is a close approximation of the ECL of 41.0 that would result by considering the loss arising in every single scenario, which is equal to the area under the line of losses in the diagram above.

This contrasts with the result in the same example if each selected scenario is instead given a weighting linked to the percentile that scenario corresponds to. One way of applying such an approach would be to:

- Apply a weighting of 10% to the 10th percentile downside scenario, as the likelihood of a scenario occurring that is equally or more severe is 10%;

- Apply a weighting of 10% to the 90th percentile upside scenario, as the likelihood of a scenario occurring that is equally or more positive is 10%; and

- Apply a weighting of 80% to the 50th percentile base case scenario, being the balancing figure in order for all the weightings to sum to 100%.

This approach is illustrated diagrammatically below:

Using this approach, the ECL would be estimated as being the sum of:

- 95 (loss in downside scenario) × 10% weighting = 9.5

- 30 (loss in base case scenario) × 80% weighting = 24

- 2.5 (loss in upside scenario) × 10% weighting = 0.25

This gives an estimated ECL of 33.75, which is 18% less than the ECL of 41.0 that would result by considering the loss arising in every single scenario.

Where such a difference is material such an approach would not produce an unbiased estimate of expected credit losses as required by paragraph 5.5.17 of IFRS 9.

5. Could different parts of a group apply different weightings to the same multiple scenarios used across the group?

FAQ 45.72.6

Question:

IFRS 9 paragraph 5.5.17(a) requires an entity to measure expected credit losses (ECL) in a way that reflects an unbiased and probability-weighted amount that is determined by evaluating a range of possible outcomes.

Consider a situation where a banking group, for example via its central Economics Department, has selected a single, consistently applied set of discrete multiple forward looking macro-economic scenarios to be used across the group at a reporting date. Could different parts of the group, for example the Retail banking division and the Wholesale banking division, apply different weightings to those same multiple scenarios at that reporting date?

Please note: this FAQ assumes that the approach taken to calculate ECL is to use discrete forward looking macro-economic scenarios rather than a Monte Carlo or other type of approach. In addition, it should not automatically be assumed that a group can use the same forward looking multiple scenarios for different parts of the group, given the need to capture material non-linearities across the group's various activities. For example, material non-linearities in a wholesale lending portfolio may only occur under a more severe downside scenario compared to a retail lending portfolio or vice versa (also refer to FAQ 45.72.4 – How many forward looking macro-economic scenarios need to be considered in measuring ECL?). However, for this example it has been assumed that the banking group has justified the use of the same forward looking multiple scenarios by the different parts of the group.

Solution:

Yes. If a group applies the same set of multiple scenarios across the whole group, then if different parts of the group have different exposure profiles, it should not be assumed that the same weighting is appropriate for all parts of the group. This is consistent with the conclusion of the September 2015 meeting of the IFRS Transition Resource Group for Impairment of Financial Instruments ('ITG') (refer paragraph 41 of the IASB meeting summary) that different factors may be relevant to different financial instruments and accordingly the relevance of particular items of forward looking information may vary between financial instruments, depending on the specific drivers of credit risk. So the outcome of a particular scenario may be representative of a bigger subset of the complete distribution of scenarios that could occur – and so require a greater weighting – for one group of financial instruments (e.g. a retail loan portfolio or loans originated in geography A) as compared to another (e.g. a wholesale loan portfolio or loans originated in geography B). This is discussed in more detail in the illustrative example presented below.

When determining the weighting to be applied to a particular scenario, given the objective of IFRS 9 is to determine the probability weighted ECL, the weighting should be determined with the objective of achieving an unbiased ECL.

In practice, entities may choose to define group-wide scenario weightings at the group level, taking account of the group-wide exposure profile, and then amend this for group reporting purposes only where there is a materially different exposure profile in a specific part of the group. In addition, the impact of scenario weightings would typically be expected to be less for financial instruments in stage 1 than for financial instruments in stage 2. Different considerations, for example what is considered to be material, may apply in the separate financial statements of individual subsidiaries within the group.

Illustrative example

NB This example is intentionally simplified so as to illustrate the principle that different scenario weightings could be required in different parts of a group when the same multiple scenarios are used across the group. It is not intended to provide a view on any other aspect of ECL calculation. It also assumes that all necessary information, in particular the complete loss profile, is reasonable and supportable and available without undue cost and effort, which in practice will rarely, if ever, be the case.

Consider a very simplified example involving a group whose divisions include Division A, a retail banking division advancing loans to individual customers, and Division B, a wholesale banking division lending to large corporate customers. Assume that:

- All possible scenarios can be placed in order of severity, with the 0th percentile scenario being the worst case scenario and the 100th percentile being the best case scenario;

- Three scenarios have been justified as being appropriately representative of the complete distribution at the group-wide level, being the 10th percentile (downside), 50th percentile (base case) and 90th percentile (upside) scenarios;

- The appropriate stages for loans have already been determined taking account of the impact of multiple scenarios; and

- The profile of losses in the two divisions differ, with losses arising in the retail banking division (Division A) in a given scenario almost always being greater than for the wholesale banking division (Division B) as illustrated in the diagram below.
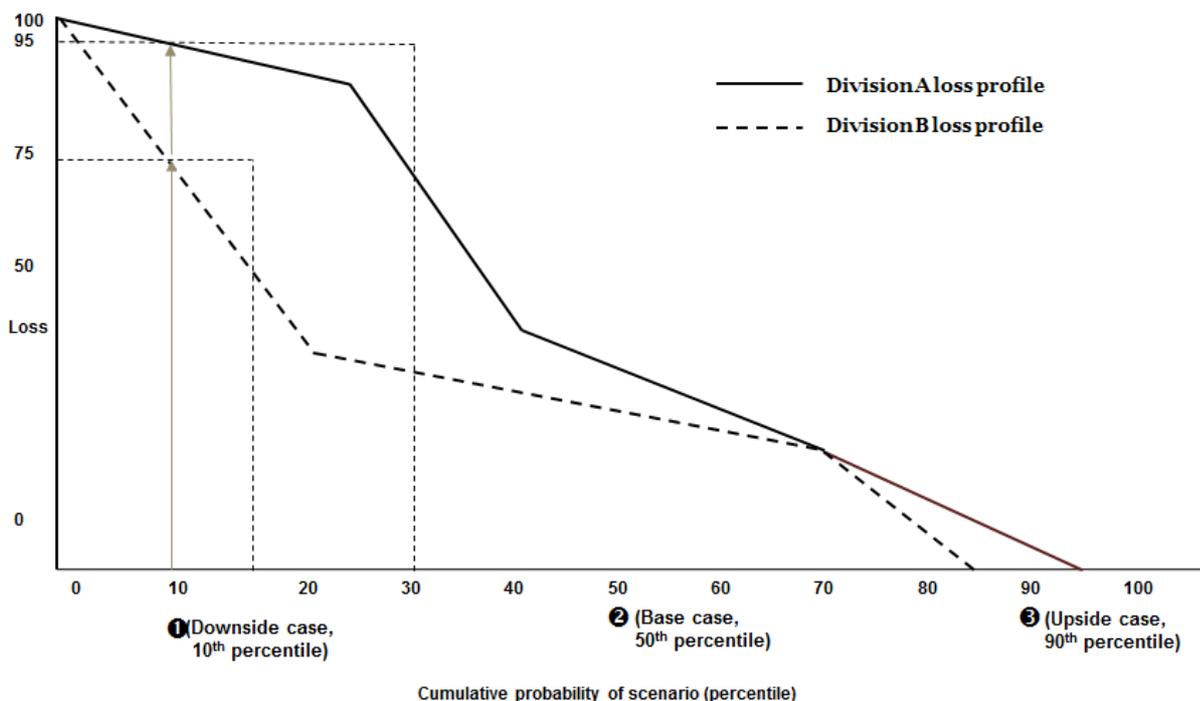
In this situation, if the downside scenario weighting is determined separately for Division A and Division B based on the sub-set of scenarios for which the outcome or loss arising in the downside scenario is representative (refer FAQ 45.72.5 - How should weightings be determined for multiple forward looking macro-economic scenarios?) then:

- For Division A, if the loss arising in the 10th percentile downside scenario of 95 is considered to be representative of the losses arising in all scenarios between the 0th and 30th percentiles, then that scenario would be expected to be given a 30% weighting; whereas

- For Division B, if the loss arising in the 10th percentile downside scenario of 75 is considered to be representative of the losses arising in all scenarios between the 0th and 15th percentiles, then that scenario would be expected to be given only a 15% weighting.

That is, because of the different loss profiles in the two divisions, the loss arising in the downside scenario is representative of more scenarios for Division A than it is for Division B. Therefore in this situation, depending on the significance of the impact, it could be appropriate for different parts of the group (i.e. Division A and Division B) to apply different weightings to the same multiple scenarios used across the group.

6. Inclusion of cash flows expected from the sale on default of a loan in the measurement of expected credit losses (ECL)

FAQ 45.72.3

Question:

IFRS 9 defines credit losses as the difference between all contractual cash flows that are due to the entity in accordance with the contract and the cash flows that the entity expects to receive. In certain circumstances, an entity may choose to sell a defaulted loan to a third party in order to maximise recovery cash flows.

Should the cash flows that are expected to be recovered in this manner be included in the measurement of ECL?

Solution:

Yes, but only to the extent that the entity expects to sell loans after default.

The cash flows that an entity expects to receive on default of a loan may be based several different scenarios such as: taking no action; keeping the loan and restructuring it to maximise collections; selling the loan; or foreclosing on the loan and collecting the collateral. Accordingly, when measuring ECL, selling the loan may be a relevant scenario when considering the possibility that a credit loss occurs (that is, in a default scenario).

Hence, the cash flows expected from the sale on default of a loan should be included in the measurement of ECL if:

- Selling the loan is one of the recovery methods that the entity expects to pursue in a default scenario;

- The entity is neither legally nor practically prevented from realising the loan using that recovery method; and

- The entity has reasonable and supportable information upon which to base its expectations and assumptions.

In order to support an entity's expectation that loan sales would be used as a recovery method in a default scenario, an entity should consider both its past practice and its future expectations, which may differ from past practice. When determining the amount of recovery proceeds to include in the measurement of ECL, an entity should consider relevant market related information relating to loan sale prices and should include selling costs.

In the circumstances described above, the inclusion of recovery sale proceeds in the measurement of ECL would be appropriate for financial instruments in all of the stages 1, 2 and 3. This is because when measuring expected credit losses, paragraph 5.5.18 of IFRS 9 requires an entity to reflect the possibility that a credit loss occurs (and the possibly that no credit loss occurs) for financial instruments in all impairment stages, even if the possibility of a credit loss occurring is very low.

However, proceeds from possible future sales should not be included in the expected cash flows when considering the possibility that no credit loss occurs (that is, in a performing scenario). For example, if, in the case of a particular loan portfolio, an entity concludes that there is a 10 per cent probability of default occurring, it would only be when considering the outcome of this default scenario that expected sale proceeds would be considered. If, in that default scenario, the entity expects to sell all the defaulted loans and recover 30 per cent of the contractual cash flows of the loan through sale proceeds, but if it did not sell the loan would only expect to recover 25 per cent through continuing to hold the loan, the loss given default for that default scenario would be 70 per cent rather than 75 per cent.

Illustrative disclosure notes extracts

The extracts below relating to forward-looking information and multiple scenarios are taken from our publication 'IFRS 9 for banks – illustrative disclosures', which presents the disclosures introduced or modified by IFRS 9, 'Financial Instruments', for a fictional medium-sized bank. Supporting commentary is also provided. The extracts are for illustrative purposes only and should be considered in conjunction with the relevant financial reporting standards and any other reporting pronouncements and legislation applicable in specific jurisdictions.

IFRS 9 allows a variety of approaches in measuring ECL and industry thinking continues to evolve. Banks will therefore need to take account of their individual circumstances in determining the appropriate disclosures. The approach illustrated in the extracts below is just one possible way the requirements of IFRS 9 ECL may be met but is not intended to provide any view on the type of approach that should be applied.

The example disclosures may not be the only acceptable form of presenting financial statement disclosures. Alternative presentations may be acceptable if they comply with the specific disclosure requirements prescribed by IFRS. Readers may find our IFRS disclosure checklist useful to identify other disclosures that may be relevant under the circumstances but are not illustrated. Conversely, disclosures presented should not be included where they are not relevant or not material in specific circumstances.

IFRS7 (35G)(b)	**Forward-looking information incorporated in the ECL models**

The assessment of significant increase in credit risk ('SICR') and the calculation of ECL both incorporate forward-looking information. The Group has performed historical analysis and identified the key economic variables impacting credit risk and expected credit losses for each portfolio.

These economic variables and their associated impact on the PD, EAD and LGD vary by financial instrument. Expert judgment has also been applied in this process. Forecasts of these economic variables (the 'base economic scenario') are provided by the Group's Economics team on a quarterly basis and provide the best estimate view of the economy over the next five years. After five years, to project the economic variables out for the full remaining lifetime of each instrument, a mean reversion approach has been used, which means that economic variables tend to either a long run average rate (e.g. for unemployment) or a long run average growth rate (e.g. GDP) over a period of two to five years. The impact of these economic variables on the PD, EAD and LGD has been determined by performing statistical regression analysis to understand the impact changes in these variables have had historically on default rates and on the components of LGD and EAD.

In addition to the base economic scenario, the Group's Economics team also provide other possible scenarios along with scenario weightings. The number of other scenarios used is set based on the analysis of each major product type to ensure non-linearities are captured. The number of scenarios and their attributes are reassessed at each reporting date. At 1 January 2018 and 31 December 2018, for all but two portfolios the Group concluded that three scenarios appropriately captured non-linearities. For portfolios [X] and [Y], the Group concluded that two additional downside scenarios were required. The scenario weightings are determined by a combination of statistical analysis and expert credit judgement, taking account of the range of possible outcomes each chosen scenario is representative of. The assessment of SICR is performed using the Lifetime PD under each of the base, and the other scenarios, multiplied by the associated scenario weighting, along with qualitative and backstop indicators. This determines whether the whole financial instrument is in Stage 1, Stage 2, or Stage 3 and hence whether 12-month or lifetime ECL should be recorded. Following this assessment, the Group measures ECL as either a probability weighted 12 month ECL (Stage 1), or a probability weighted lifetime ECL (Stages 2 and 3). These probability-weighted ECLs are determined by running each scenario through the relevant ECL model and multiplying it by the appropriate scenario weighting (as opposed to weighting the inputs).

As with any economic forecasts, the projections and likelihoods of occurrence are subject to a high degree of inherent uncertainty and therefore the actual outcomes may be significantly different to those projected. The Group considers these forecasts to represent its best estimate of the possible outcomes and has analysed the non-linearities and asymmetries within the Group's different portfolios to establish that the chosen scenarios are appropriately representative of the range of possible scenarios.

IAS1 (125) **Economic variable assumptions**

The most significant period-end assumptions used for the ECL estimate as at 31 December 2018 are set out below. The scenarios 'base', 'upside' and 'downside' were used for all portfolios. The scenarios 'downside 2' and 'downside 3' were applied only to portfolios [X] and [Y].

		2019	2020	2021	2022	2023
Interest rates	**Base**	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%
	Upside	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%
	Downside	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%
	Downside 2	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%
	Downside 3	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%
Unemployment rate	**Base**	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%
	Upside	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%
	Downside	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%
	Downside 2	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%
	Downside 3	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%
House price index	**Base**	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%
	Upside	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%
	Downside	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%
	Downside 2	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%
	Downside 3	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%
Domestic GDP	**Base**	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%
	Upside	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%
	Downside	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%
	Downside 2	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%
	Downside 3	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%

[Other assumptions should be disclosed as appropriate to the circumstances]

The weightings assigned to each economic scenario at 31 December 2018 were as follows:

	Base	Upside	Downside	Downside 2	Downside 3
Portfolios X and Y	[X]%	[X]%	[X]%	[X]%	[X]%
All other portfolios	[X]%	[X]%	[X]%	N/A	N/A

The most significant period-end assumptions used for the ECL estimate as at 1 January 2018 are set out below. The scenarios 'base', 'upside' and 'downside' were used for all portfolios. The scenarios 'downside 2' and 'downside 3' were applied only to portfolios [X] and [Y].

		2018	2019	2020	2021	2022
Interest rates	**Base**	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%
	Upside	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%
	Downside	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%
	Downside 2	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%
	Downside 3	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%
Unemployment rate	**Base**	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%
	Upside	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%
	Downside	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%
	Downside 2	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%
	Downside 3	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%
House price index	**Base**	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%
	Upside	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%
	Downside	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%
	Downside 2	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%
	Downside 3	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%
Domestic GDP	**Base**	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%
	Upside	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%
	Downside	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%
	Downside 2	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%
	Downside 3	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%	[X-Y]%

[Other assumptions should be disclosed as appropriate to the circumstances]
The weightings assigned to each economic scenario as at 1 January 2018 were as follows*:*

	Base	**Upside**	**Downside**	**Downside 2**	**Downside 3**
Portfolios X and Y	[X]%	[X]%	[X]%	[X]%	[X]%
All other portfolios	[X]%	[X]%	[X]%	N/A	N/A

Other forward-looking considerations not otherwise incorporated within the above scenarios, such as the impact of any regulatory, legislative or political changes, have also been considered, but are not deemed to have a material impact and therefore no adjustment has been made to the ECL for such factors. This is reviewed and monitored for appropriateness on a quarterly basis.

PwC observation – Different geographies, number of forward-looking macro-economic scenarios and use of management 'overlays'

Banks should consider how the illustrative disclosures above should be adapted to take account of their own particular circumstances, for example to cover different geographies and/or different assumptions which may also be relevant.

For illustrative purposes only, the same three forward-looking macroeconomic scenarios have been considered appropriate for all but two of the portfolios held by the Group. In practice, Banks will have to determine for each material portfolio both the appropriate number of scenarios to be used and what those scenarios should be, taking account of the types of products, geographies etc. to which they are exposed and the resulting nonlinearities and potential losses.

In the above illustrative disclosure, management has concluded that no additional provision or 'overlay' is required for regulatory, legislative or political changes. However, where major events occur close to the reporting date, so that the potential effects are not appropriately captured in models and inputs, this may well be a key area of judgement that also requires greater disclosure. More recent examples of such events include the UK 'Brexit' vote to leave the EU.

IAS1 (129) **Sensitivity analysis**

The most significant assumptions affecting the ECL allowance are as follows:

Retail portfolios

1   House price index, given the significant impact it has on mortgage collateral valuations; and

2   Unemployment rate, given its impact on secured and unsecured borrowers' ability to meet their contractual repayments.

Wholesale portfolios

1   GDP, given the significant impact on companies' performance and collateral valuations; and

2   Interest rate, given its impact on companies' likelihood of default.

Set out below are the changes to the ECL as at 31 December 2018 that would result from reasonably possible changes in these parameters from the actual assumptions used in the Group's economic variable assumptions (for example, the impact on ECL of increasing the estimated unemployment rate by [X]% in each of the base, upside, downside, downside 2 and downside 3 scenarios):

Retail portfolios

		Unemployment		
		[-X%] CU'000	No change CU'000	[+X%] CU'000
House price index	**[+X%]**	X	X	X
	No change	X	–	X
	[-X%]	X	X	X

Wholesale portfolios

		Interest rates		
		[-X%] CU'000	No change CU'000	[+X%] CU'000
GDP	**[+X%]**	X	X	X
	No change	X	–	X
	[-X%]	X	X	X

PwC observation – Sensitivity analysis on ECL measurement

The key drivers of sensitivity disclosed above are purely illustrative and Banks will need to analyse their own portfolios to determine which parameter's sensitivities are most relevant to users of the financial statements.

In particular, whilst not illustrated above, this may include the sensitivity of the ECL provision to changes in the weightings determined for each of the economic scenarios.

The disclosure above represents one way of meeting the disclosures required by IAS 1 paragraphs 125 and 129. Banks should also consider, as applicable, the expectations and guidance provided by different national regulators and other international bodies, such as the Financial Stability Board's Enhanced Disclosure Task Force (EDTF). Furthermore, Banks should also consider the appropriate level of granularity for these disclosures, which may vary depending on the characteristics of their different portfolios and which elements of the ECL calculation have the greatest impact.

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