საქართველოს ეროვნული ბანკი
National Bank of Georgia

Guidelines on Expected Credit Losses under IFRS 9

March

2018

Contents

Introduction

1. These guidelines provide application guidance to Financial Institutions (FIs) applying International Financial Reporting Standard 9 (IFRS 9). These guidelines are issued in order to ensure common, uniform, and consistent application of the IFRS 9 and to establish consistent, efficient, and effective supervisory practices. These guidelines address commercial banks and other financial institutions supervised by NBG (hereafter referred to as Financial Institutions or FIs); however, other entities are also encouraged to follow these provisions. The guidelines are mainly designed to be applied by FIs in respect of their loan portfolios; nevertheless, FIs may apply many of the provisions of the guidelines to other debt instruments and receivables (debt securities, deposits, etc.), which according to IFRS 9 are measured either at amortized cost or at fair value through other comprehensive income.

2. IFRS 9 Financial Instruments, which replaces IAS 39 Financial Instruments: Recognition and Measurement ('IAS 39'), for the accounting periods beginning on or after 1 January 2018, requires the measurement of impairment loss allowances to be based on an expected credit loss ('ECL') accounting model rather than on an incurred loss accounting model.

3. Within the IFRS 9 framework, credit risk assessments should incorporate forward-looking analysis. In particular, when assessing expected credit losses, the analysis of macroeconomic and financial factors, expected risks and dynamics should all be taken into account. The National Bank of Georgia (NBG) welcomes this amendment and believes that it will facilitate timely recognition of credit risks and will therefore have a positive impact on financial stability. Under IFRS 9, FIs' loan-loss provisions are mainly driven to dampen procyclical behavior of FIs. Buffers are replenished during good times (on behalf of a drawdown, when needed), and earnings are smoothed in the process. Hence, forward-looking provisioning may dampen (rather than enhance) the business cycle.

4. To ensure the consistent, transparent and efficient application of IFRS 9 across institutions and the comparability of financial institutions' financial statements, NBG decided to regularly publish macroeconomic forecast scenarios.

5. In December 2015, the Basel Committee on Banking Supervision ('BCBS') issued supervisory guidance on credit risk and accounting for expected credit losses (the 'BCBS guidance'), which sets out supervisory expectations for credit institutions related to sound credit risk practices associated with implementing and applying an ECL accounting model. The following guidelines, which are mainly based on the BCBS guidance, ensure sound credit risk management practices for credit institutions, associated with the implementation and ongoing application of ECL accounting models.

6. The guidelines must supplement rather than substitute IFRS 9. The guidelines are developed in a manner not to contradict IFRS 9 requirements. If in specific circumstances such contradictions are identified financial institutions should follow requirements of IFRS 9, however in such cases solid justification of the existence of contradiction should be provided to NBG.

7. The guidelines are to be applied within the context of quantitative and qualitative materiality levels applied during preparation of IFRS financial statements. Considering this fact any provision of the guideline can be disregarded if it can be clearly demonstrated that it has immaterial effect.

Article 1. Overview impairment approach under IFRS 9

Impairment under IFRS 9 requires the use of an expected loss approach for the calculation of impairment allowances. Unlike its predecessor IAS 39, the standard's core principle with respect to impairment is that impairment allowances are recognized before the losses are actually incurred. The losses are recognized through the whole life of the asset regardless of deterioration of credit quality of the asset. However, the deterioration of credit quality results in change of approach how and to what extent are the losses estimated. Accordingly, the standard distinguishes following types of expected credit losses:

a. 12 month expected credit losses (12m ECL) – These losses are recognized for assets, credit risk of which has not increased significantly since initial recognition. For the purposes of these guidelines 12 month ECL will be referred to as stage 1 losses and related exposures will be referred to as stage 1 exposures;
b. Lifetime ECL – These losses are recognized for assets credit risk of which has increased significantly since initial recognition. For the purposes of these

guidelines lifetime ECL will be referred to as stage 2 losses and related exposures will be referred to as stage 2 exposures;

c. Losses for credit impaired financial assets – these represent already identified incurred losses on financial assets. The standard does not explicitly distinguish these losses from lifetime ECL, however due to the fact that these losses are already incurred and in practice their way of calculation differs from way of calculation of losses estimated to be incurred in the future, for the purpose of these guidelines, these losses will be referred to as stage 3 losses and related exposures will be referred to as stage 3 exposures;

Article 2. Integrated information systems for credit risk assessment and monitoring

1. A FI's credit risk assessment process for loan portfolio should provide the FI with the necessary tools, procedures and observable data to use for assessing credit risk, accounting for credit losses and determining regulatory requirements.

2. FI's credit risk monitoring system should meet fundamental requirements and incorporate procedures including the appropriate tools to assess credit risk accurately. These fundamental requirements, procedures and tools are all equally necessary for the assessment of credit risk, accounting and regulatory reporting. Accordingly, they serve as common elements in assessing credit risk for all three purposes. Therefore, this commonality allows the use of the same systems for each of the three purposes. Common systems strengthen the reliability and consistency of the resulting figures, enhance the consistency in the outcomes achieved for the three different purposes, and minimize the potential risk of disincentives to follow sound loss allowance calculation practices for one or more of the measurement purposes. Generally, common types of data that are used in assessment and valuation processes include credit risk grades, historical loss rates, characteristics used to group loans for collective assessment and observable data used to estimate credit losses or to adjust historical loss rates, etc.

Article 3. Credit loss trigger events and their application

1. Under IFRS 9: "Financial Instruments" an entity assesses at the end of each reporting period whether:
    a. the credit risk on an exposure has increased significantly since initial recognition, and
    b. the exposure is credit-impaired (when one or more events that have detrimental impact on the estimated future cash flows of the financial asset have occurred);

    When assessing significance of increase in credit risk according to IFRS 9 an entity shall use change in the risk of a default occurring over the expected life of the financial asset. In other words, risk of default occurring at the reporting date and risk of default occurring at the date of initial recognition shall be compared with each other. During the assessment, the entity should use all reasonable and supportable forward-looking information that is available without undue cost or effort. For details regarding forward-looking information, please refer to Article 8.

    Definition of credit-impaired financial assets per IFRS 9 includes non-exhaustive list of events indicating that credit loss might have been incurred. The standard also implies that it may not be possible to identify a single discrete loss event and that combined effect of several events may have caused financial assets to become credit impaired. This definition does not materially differ from definition of impaired assets as per IAS 39: "Financial Instruments: recognition and measurement", according to which, an asset is impaired and impairment losses are incurred, if there is "objective evidence" of impairment as a result of one or more events ("the loss event") that occurred after the exposure was originated and that the loss event has an impact on the estimated future cash flows of the loans and these cash flows can be reliably estimated.

2. A financial institution should prudently assess all credit exposures for both: significance of increase in credit risk and whether the exposure is credit-impaired. To meet this objective, adequate trigger events need to be established. The latter could have already occurred or may occur in the future. Triggers should include but not be limited to the following:

    a. General triggers for exposures to all types of borrowers:
        i. Deterioration of the macroeconomic outlook relevant to a particular borrower or group of borrowers. See Article 8 for additional

considerations regarding guidance on the consideration of forward-looking information, including macroeconomic factors.

ii. Deterioration of the regulatory, political, and technological outlook that is relevant to a particular borrower or to a group of borrowers.
iii. Adverse changes in the sector or industry conditions in which the borrower operates
iv. Significant change in internal price indicators of similar products of the FI, such as increase of interest rate, increase of minimum collateral requirements etc.
v. Exposure(s) of other borrower(s) within group becoming or remaining credit-impaired;

b. Specific triggers for exposures to business borrowers:
   i. A default, initiation of bankruptcy proceedings or breach of a contract (including breach of covenants);
   ii. Call of off-balance sheet liabilities (any type) which was not expected ahead and was not predetermined by credit project;
   iii. Loan being past due for more than 30 days;
   iv. Restructuring of exposures (according to NBG classification);
   v. Reclassification or maintenance of exposure in the following classes: “Watch loans”, “Substandard loans”, “Doubtful Loans” or “Loss loans” as defined by NBG;
   vi. Deterioration of borrower’s credit rating, assessed by the FI (or assessed by credit rating agency);
   vii. Initiation of legal proceedings that may result in significant cash outflow;
   viii. Emergence of new competitors on monopolistic and oligopolistic markets, that may result in decrease of market share or prices;
   ix. Fraud in the borrowers business;
   x. Sale of crucial part of the business or property which is necessary for the entity’s profit making day to day activities ;
   xi. Significant delay in provision of financial information by the borrower
   xii. Recent frequent changes in senior management of the borrower
   xiii. Debt Service Coverage ratio < 1 (for particular industries higher threshold might be necessary)
   xiv. Deterioration of borrowers’ financial performance (taking into consideration seasonality of a business), indicated by

        1. Interest coverage ratio (EBIT / Interest Expenses) < 2.5;
        2. Debt / EBITDA >3.5;
        3. Equity / Assets <30%;
        4. Significant decrease in sales;
        5. Preservation of negative operating cash flow;
        6. Loss of major customer;
        7. Termination of an agreement with major supplier;
        8. Deterioration of liquidity;
        9. Deterioration of profitability;
        10. Etc.

   c. Specific triggers for exposures to individuals:
      i. Loan being past due for more than 30 days;
      ii. Reclassification or maintenance of exposure in the following classes: “Watch loans”, “Substandard loans”, “Doubtful Loans” or “Loss loans” as defined by NBG;
      iii. Deterioration of borrower’s credit score, assessed by the FI;
      iv. Restructuring of exposures (according to NBG classification).
      v. Deterioration of the borrowers debt service capacity indicated by worsened payment to income ratio;
      vi. Initiation of legal proceedings that may result in significant cash outflow;
      vii. Loss of job by the borrower;
      viii. Death of the borrower;

   d. Specific triggers for exposures to “Start-Up businesses”, in addition to those listed above:
      i. Underperformance in comparison with the plan of the project;
      ii. Emergence of concerns regarding feasibility and completion of the project.

3. Despite the fact that occurrence of the triggers (individually or collectively) listed above does not necessarily lead to exposures becoming stage II or stage III, the exposures should still be tested for significant increase in credit risk or credit-impairment. Occurrence of some of the triggers listed above are expected to indicate that there has been more severe impact (if any) on exposure’s credit risk than occurrence of others triggers do (if any). Still due to various circumstances, any of the triggers mentioned may indicate that either credit risk on one or all of the exposures of borrower has increased significantly (transfer to stage 2) or that

exposures of the borrower are already credit-impaired (transfer to stage 3). Adequate procedures should be in place in order to properly identify the effect (if any) of the trigger event on the credit risk status of the exposure.

4. Triggers listed above are designed based on practical experience of NBG. The triggers and applicable levels should be adjusted for subsequent loss allowance calculation purposes if they were already present at the point of origination/purchase of the exposure. This is because, even if the trigger levels were in fact present at the point of origination/purchase of an exposure, they would nevertheless constitute to an exposure to be classified as either stage 1 exposure, or as originated credit impaired exposure and the same trigger levels will not be viable for the purpose of assessing whether there has been significant increase in credit risk or credit impairment. In such case in order to further measure changes in the credit risk these triggers can be used by an entity but with more severe/conservative (higher or lower) thresholds as applicable, which would be appropriate for such an exposure (e.g. if a loan was issued at the point when Equity to Assets ratio was 30%, it would be logical, all other things held constant, to use Equity to Assets ratio less than 30% as a threshold to test exposure for significant increase in credit risk). Similarly, above threshold levels of mentioned triggers shouldn't be taken as most severe/conservative (highest/lowest) threshold to test significant increase in credit risk or impairment. (e.g. if loan was issued at the point when significant permanent growth in borrower's sales was expected, pause in growth of the sales may be set as reasonable enough threshold to test exposure for significant increase in credit risk. In other words, significant increase in credit risk of the borrower may occur well before the borrowers sales actually decrease significantly, as it is identified above as trigger).

5. Assumptions concerning the impact of changes in general economic activity on borrowers' payment capacity, both favorable and unfavorable, should be made with sufficient prudence.

6. For the purpose of identifying deterioration of borrowers' financial performance as per subparagraph b of paragraph 2 (XIV: 4 to 10) FIs should establish materiality thresholds expressed in different types of quantitative indicators (e.g. sales decrease, profitability margin deteriorations, leverage and other). For different industries, different types of ratios and/or other quantitative indicators might be used, considering the specific characteristics of particular sector.

7. Materiality threshold for business borrowers, specified in paragraph 2, should be applied in a stricter way in case of small and medium size business borrowers compared to large corporate ones.

8. The FI should have clear policies regarding how trigger events are applied to different loans and loan pools for identification of the stage 2 and stage 3 losses and how the quantitative indicators of triggers are incorporated into the collective assessment models for the purpose to stratify loan portfolio into groups on the bases of similar credit risk characteristics.

9. If there is evidence that credit risk of exposure has increased significantly since initial recognition or that the exposure has become credit-impaired, the FI should document the type of identified evidence. If no such evidence exists, the FI should document the steps taken when arriving at this conclusion.

10. If a FI has advanced multiple loans to a particular borrower, some of which are performing according to the contract, while others are defaulted or are credit impaired, all exposures to this borrower accordingly should be considered to be defaulted or credit impaired appropriately unless bank has evidence of the contrary. If such evidence exists proper assessment should be put in place in order to determine whether or not credit risk on other exposures to this borrower has increased significantly since initial recognition.

11. If a FI has advanced multiple loans to a particular borrower, credit risk on one of which has increased significantly since initial recognition, proper assessment should be put in place in order to determine whether or not credit risk on other exposures to this borrower has also increased significantly since initial recognition.

12. If a FI has advanced loans to borrowers which are interrelated so that represent a single group and if loans of some of the borrowers within the group have defaulted, became credit impaired or were transferred to stage 2, proper assessment should be put in place in order to determine whether or not exposure(s) to other borrower(s) within the group have also defaulted, became credit impaired or have transferred to stage 2.

13. Relevant triggers described in this article must be applied if their application is expected to materially increase accuracy or confidence level of ECL estimates and information about them is available without undue cost or effort. Considering the fact that credit risk is integral to FIs' operations and information about it is considered to be material to users of FIs' financial statements, FIs' are expected to

make all steps necessary to obtain information about trigger(s) unless impracticable. In case of absence of such information, FI's should be able to provide proper justification on why they consider cost or effort necessary to obtain the information to be undue or why obtaining the information is impracticable.

Article 4. Individually significant and non-significant exposures and their assessment for credit losses

1. Individually significant exposures should be assessed for credit losses on individual basis. Exposures that are not individually significant may be assessed for impairment either on an individual or on a group basis. Individually significant exposures should be assessed for credit losses regardless of occurrence of the trigger events. Credit loss assessment should be performed for all exposures for which the trigger event has been occurred.

2. FIs should maintain supporting documentation on each individual exposure or group of exposures that explains rationale for determining whether an exposure should be assessed individually or collectively for impairment.

Article 5. Individual assessment for credit losses

Thresholds for assessment

1. FIs shall establish reasonable threshold for defining individually significant exposures by borrowers and groups of borrowers within portfolio.

2. Threshold for defining individually significant exposures shall not exceed 1 % of the regulatory capital.

3. FI should ensure that all exposures subject to individual assessment according to point 2 of this article are tested for credit losses. Where a FI has a number of individually significant exposures to one counterparty each loan should be individually assessed.

Calculation of 12 month expected credit losses (Stage 1 Losses)

4. Concept of stage 1 losses refers to estimation of those credit losses (during the whole life of the exposure), which will result from those default events, which are expected to be incurred within 12-month period from the reporting date. These losses should be calculated for all exposures, which are not stage 2 and stage 3 exposures.

5. The standard does not provide any guidance on what is meant under default event. Concept of default may be defined in various ways but there is rebuttable presumption that the default does not occur later that when exposure is more than 90 days past due (B5.5.37; BC5.248 – BC5.253). For the purposes of stage 1 losses, FIs should provide and document their definition of default event (without prejudice to the 90 days past due presumption), which:
    a. Should at least be based on overdue days (it is expected that threshold of overdue days of less than 90 will be used by the FI when relevant);
    b. May be also based on particular events, if there is strong evidence that the events per question, with high probability, lead to exposure being overdue for number of days, which according to point 5a of this article would be qualified as default event;
    c. May differ according to exposure type

6. For the purpose of stage 1 loss calculation probability that the trigger event occurs should be calculated for the period which is lesser of:
    a. forthcoming 12 month, and
    b. remaining maximum contractual period (including extension options) over which the entity is exposed to credit risk

7. Calculation of stage 1 losses should incorporate macroeconomic forecast scenarios published by NBG. The published scenarios should affect both, probability of occurrence of the default events during the period as per points 5 and 6 of this article and calculation of respective loss amounts.

Testing exposure for significant increase in credit risk

8. Individually significant exposures should be assessed for significant increase in credit risk on a regular basis (for example on a quarterly basis) at least at the end of each reporting period.

9. Concept of stage 2 losses refers to estimation of all losses, which will result from all possible default events over expected life of exposure.

10. The test for significant increase in credit risk should be done individually at least for those exposures:
    a. which meet threshold and grouping requirements indicated in points 2 and 3 of this article, and at the same time;
    b. trigger events for which (indicated in point 2 of article 3) have occurred since initial recognition of the exposures;

11. Calculation of stage 2 losses should incorporate macroeconomic forecast scenarios published by NBG. Similar to stage 1 losses the published scenarios should affect both, probability of occurrence of the default events during the period as per points 6 and 7 of this article and calculation of respective loss amounts.

Testing exposures for being credit-impaired

12. If one or more events that have a detrimental impact on the estimated future cash flows of an exposure have occurred, respective stage 3 loss should be recognized. The loss should be calculated as difference between all cash flows that are due to an entity in accordance with the contract and all the cash flows that the entity expects to receive (ie all cash shortfalls), discounted at the original effective interest rate.

13. For impairment assessment of individually significant exposures, FIs are expected to use reasonable (not optimistic) approach for models of future cash flows and collateral fair value estimation, with proper justifications.

14. Analysis of cash flows of single borrower or of group of related borrowers should at least include:
    a. Analysis of industry within which the borrower(s) operate(s) including analysis of both existing and forecasted industrial and economic trends that may affect current or future cash flows of the borrowers or the group of the borrowers;
    b. Solid justification of all estimated improvements in future cash flows (when there is declining historical trend of income or cash inflows. The positive improvements should not be projected, unless reasonable justification is provided);
    c. Analysis of existing contingent liabilities and commitments issued by the FI to the borrower or group of related borrowers (issued guarantees, letters of credit etc.);
    d. Analysis of existing liabilities, contingencies and commitments of the borrower or group of the borrowers (guarantees and letters of credit issued to third parties, lawsuits etc.);

15. Repayment by shareholders with own resources should not be considered unless the source of payment is analyzed properly;

16. The cash inflows and outflows of the borrower should be analyzed and some of the cash flows should be excluded, if necessary, to arrive at funds available for the exposure repayment. Such inflows or outflows may include but are not limited to:
    a. Reasonable capital expenditures necessary for maintenance of operating capabilities as well as for expansion if planned;
    b. Net cash outflow to sustain business operations;
    c. Payment of taxes, including profit tax;
    d. Payment of dividends;
    e. Payments to finance the sale of collateral;

17. The analysis should be based on the latest available and verified information (both financial and nonfinancial) reflecting company's performance after trigger event date.

18. The cash flow projections should take into account forward looking information that is used for PD/LGD calculation purposes for stage 1 and stage 2 loans (please refer to Article 8 for details). The logic regarding how the forward-looking information affects future cash flows of the borrower should not contradict logic applied for both PD/LGD calculation purposes for stage 1 and stage 2 loans and collateral valuation and sale period for all types of exposures.

19. Throughout performing assessment of group of borrowers, it should be assumed that cash flows generated by all borrowers within the group (including those generated by sale of collateral) will be used to repay total outstanding exposure of the group, unless:
    a. Financial difficulties of one borrower of the group will not affect debt service capabilities of another borrower of the group;
    b. Collateral pledged as security of loan exposure(s) of one borrower of the group cannot be claimed by the FI to be used to repay overdue exposure of another borrower of the group;
    c. There is no mutual guarantee contracts set on repayment of outstanding liabilities between the borrowers of the group;
    d. No other evidence exists that cash flows generated by a borrower within the group will or may be used to repay outstanding credit exposures of another borrower of the group.

20. In the absence of updated financial information after the trigger event date, the FIs shall estimate credit loss based on statistical data of loan pools with similar credit risk characteristics (for example, LGD). In such cases similarity of value and liquidity of collateral should be considered as one of the main criteria while defining loan pool with similar credit risk characteristics.

21. Stage 3 exposures may be transferred back to stage 2 or stage 1 category only if they do not any more meet criteria to be classified as stage 3 and at the same time there is evidence of consequential 6 contractual payments (the payments should not bear any relief criteria such as grace period on interest or principal).

Article 6. Collectively assessed loans

1. According to IFRS 9, B5.5.5, exposures that are collectively assessed should be grouped based on shared credit risk characteristics. FIs shall use most relevant of those shared characteristics to identify groups. The groups should be large enough in terms of number of exposures and small enough in terms of variety of exposures, in order to ensure that relevant statistical analysis with sufficient confidence level may be conducted over the group. The characteristics used by FI may differ according to the product. Purpose of assessment should be also taken into consideration (i.e. particular characteristics, which are borrower specific, may be appropriate to be used for grouping while assessing credit risk with the purpose to identify stage 3 losses, while grouping according to other characteristics, which are more exposure specific, may be more appropriate for stage 1 and stage 2 loss analysis). FIs shall provide sufficient rationale used to stratify loan portfolio into the groups. Examples of common credit risk characteristics include but are not limited to:
   a. Credit risk grades;
   b. Type (for example mortgage loans or credit card loans);
   c. Geographical location;
   d. Collateral;
   e. Counterparty type (for example consumer, commercial or sovereign);
   f. Past-due status;
   g. Maturity;
   h. Restructuring/renegotiation status;
   i. Industry sectors (for corporate/SME portfolio);

2. In estimating the shared credit risk characteristics of groups according to point 1, special attention should be paid to the creditworthiness of the borrowers, where higher risk groups represent borrowers with particular ratios exceeding the following limits,
    a. In case of individuals, payment to income (PTI):
        i. 15% if monthly salary is less the GEL 500;
        ii. 20% if monthly salary is between GEL 500 and GEL 1,000;
        iii. 25% if monthly salary is between GEL 1,000 and GEL 2,000;
        iv. 30% if monthly salary is between GEL 2,000 and GEL 4,000;
        v. 35% if monthly salary is between GEL 4,000 and GEL 8,000;
        vi. 40% if monthly salary is between GEL 8,000 and GEL 16,000;
        vii. 50% if monthly salary is above GEL 16,000;

    For FX unhedged borrowers, PTI rates listed above should be 5% lower;
    b. In case of Small and medium size business and corporate borrowers assessed on an collective basis, those exhibiting increased risk in financial performance as laid down in article 3.

3. Before performing stratification into homogenous classes based on similar risk profile (e.g. same product, default rates), segmentation adequacy should be verified using historical loss data.

4. While forming such loan groups, attention should be paid to their granularity – a group with significant concentration (several credits with high relative exposure) can no longer be considered homogenous. Statistical measures like HHI (Herfindhal-Hirschman Index) can verify that given group has low concentration.

5. The rationale for determining appropriate groupings of exposures, including observable data supporting the conclusion that the exposures in each grouping have similar attributes or credit risk characteristics should be adequately documented.

6. For the purposes of IFRS 9 PD is a measure of expected losses rather than incurred losses. Therefore, PD should be used for calculation of ECL for stage 1 and stage 2 loans. PD for stage 3 loans may be assumed to be 100% unless such assumption is illogical considering default definition used by FI.

7. Main loan loss allowance methodology calculation components include:
    a. Probability of default (PD) – The PD should represent probability of occurrence of default events, which are expected to result in credit losses on a financial instrument.

b. Exposure at default (EAD) – The EAD should represent expected outstanding exposure subject to credit risk at the period/date, when default is considered. Estimation of more than one EAD may be necessary to cover full period for which ECL for an exposures is estimated (i.e. remaining maximum contractual period (including extension options) over which the entity is exposed to credit risk).
c. Loss given default (LGD) – should be statistically calculated based on historical loan recovery data and adjusted according to existing conditions and available forward looking information. All forecasted cash flows should be discounted at original effective interest rate (or credit-adjusted effective interest rate for purchased or originated credit-impaired financial assets) to arrive at net recoverable amount.

8. PD should be calculated in following way for stage 1 and stage 2 loans:
   a. For stage 1 loans, PD should represent probability of default events that are possible within the 12 months after the reporting date (considering forward looking information including macroeconomic factors).
   b. For stage 2 loans, PD should represent probability of all default events that are possible during the expected life of the exposure (considering forward looking information including macroeconomic factors).

9. PD calculation methodology should be designed in a manner that results in similar PD estimates as if assessment of PDs had been based on borrowers rather than loans. Models that estimate portfolio PD should be based on number of borrowers (exposures), rather than their amounts. However, if group is very granular, PD can be based on exposure amounts. In this case, FI should prove that concentration level does not affect PD calculation.

10. Default Event definition might be based on overdue days. If number of days is used for default definition, such definition might differ by product types. For example, mortgages may belong to past due buckets for longer period to qualify as defaulted unlike fast installments. FIs shall provide reasonable justification for such default definitions.

11. Following factors shall be addressed by collective assessment model:
    a. Default of any particular loan of a borrower should imply trigger event for all other exposures of the borrower.
    b. Any model for PD estimation, should account for written-off loans.

c. Restructurings, roll-overs artificially reduce actual defaulted exposure in the portfolio. FI should establish effective procedures to assure such loans are timely identified and addressed in the model appropriately.
d. The choice of a model as well as calibration of model parameters should ensure that effect of the portfolio growth is fully accounted.
e. The model should cover full economic cycles to provide robust and meaningful statistical loan loss estimates for establishing the level of collective impairment losses for each group of similar loans.
f. The model should be thoroughly back-tested. If PD estimate is based on the output of some other model (scoring model for example), in addition to back-testing reasonableness of fit statistics should be provided.

12. Historical loss experience is a reasonable starting point for an institution to determine the appropriate level for the aggregate loan loss allowance. However, assessment and valuation of loan impairment cannot be based solely on historical loss experience. The historical loss observable data may be limited or not fully relevant to current circumstances. Any other current factors that are likely to cause probability of default or losses associated with the FI's portfolio to differ from historical loss experience should be taken into consideration. Before deriving final results, the model should take into account:
    a. Changes in the risk profile of the portfolio indicated by, for example, increase of Payment-to-Income Ratio (PTI), and/or significant deterioration of a value of loan collaterals (Loan-to-Value Ratio) for the both existing and new borrowers and other relevant factors.
    b. Changes in lending policies and procedures such as change in underwriting standards or chanes in requirements of PTI, credit history, LTV, age of the borrower, etc.;
    c. The effect of any concentrations on credit risk, and changes in the level of such concentrations (for example, high concentration in retail portfolio through most of the borrowers employed in particular industry with high systemic risk component);
    d. Write-offs and all types of exposure term modifications;
    e. Changes in the trend, volume and severity of past due loans and loans graded as low quality, as well as trends in the volume of impaired loans, troubled debt;
    f. Changes in international, national and local economic and business conditions and developments, including the condition of various market segments;

g. The effect of external factors such as competition and legal and regulatory requirements on the level of estimated credit losses in the institution's current portfolio.

13. When various development indicate the need for adjustments to the results arrived through the use of historical data, the management should use its experienced credit judgment to estimate probability of default, loss given default and credit losses. Such estimates shall be based on reasonable and objective assumptions and shall be supported by adequate documentation.
14. Apart from adjusting historical loss experience as mentioned above, forward looking information according to Article 8 should be taken into consideration (for both PD and LGD calculation purposes).

15. A FI should estimate an expected credit loss after considering all relevant information that is available before it completes its financial statements.

16. Any adjustments to the impairment allowances should be supported by documentation that clearly demonstrates the estimated impact of changes in the current factors on the historical loss experience (in other words, how changes in the factors have impacted loss results calculated based on historical loss experience). It is desirable for the historical loss experience to be adjusted on the basis of observable data to reflect the effects of current conditions absent in the period on which the historical loss experience is based and to remove the effects of conditions in the historical period that do not exist currently.

17. A FI should maintain sufficient historical loss data over a full credit cycle to provide robust and meaningful statistical loan loss estimates for establishing the level of collective impairment losses for each group of loans with similar credit risk characteristics. When applying experienced credit judgment, a FI should provide a sound rationale for excluding any historical loss data that is deemed not representative of the performance of the portfolio.

18. FIs that have no entity-specific loss experience or insufficient experience shall use peer group experience for comparable groups of financial assets.

Article 7. Collateral Valuation

1. FIs are expected to use reasonable approach (not optimistic) for collateral fair value estimation.

2. For the purpose of calculating the present value of future cash flows, value of collateral should be calculated as a present value of fair value less selling and all other recovery costs associated with it to arrive at net recovered amount. Such include and are not limited to: VAT, auction fees, cost of repossession, cost of liquidation, legal fees, etc. Such costs should be fully incorporated in deriving loss given default amounts of the loans.

3. Fair value of collateral shall be estimated in accordance with requirements of international standards of valuation.

4. FI should ensure that appraisers responsible for the valuation of collateral have sufficient expertise and resources to perform the valuation properly and are independent.

5. Estimated collateral realization value and liquidation period shall reflect current market conditions, FIs' past experience (statistical data) and forward-looking information according to Article 8 of this document.

Article 8. Forward looking information

1. Consideration of reasonable and supportable forward-looking information, including macroeconomic factors, is essential to the assessment and measurement of expected credit losses.

2. FIs are required to consider a wide range of information when applying ECL accounting models. According to Paragraph 5.5.17 of IFRS 9, all reasonable and supportable information should be considered that is available without undue cost or effort at the reporting date about past events, current conditions and forecasts of future economic conditions. FIs should use their experienced credit judgment in determining the range of relevant information that should be considered and whether the information is reasonable and supportable.

3. FIs should be able to demonstrate how they have considered such information in the ECL assessment and measurement process. Information should not be excluded from that process simply because an event has a low likelihood of occurring or the effect of that event on the credit risk or the amount of expected credit losses is uncertain.

4. In order, to ensure the smooth transition to IFRS 9, three different macroeconomic forecast scenarios are published by NBG. The aim of NBG's involvement in this process is to ensure transparent, consistent and efficient application of IFRS 9 across institutions and the comparability of credit institutions' financial statements.

5. Paragraph 5.5.17 (c) of IFRS 9 refers to the information about forecasts of future economic conditions, which implies that more than one forecast is required to be considered. Therefore, the NBG will regularly publish three macro scenarios. Among these scenarios, one will be baseline – describing the most probable state and other two alternatives – analyzing the most important current risks. Scenarios will provide path for main macro variables most relevant for financial sector assessment. In particular: real GDP growth rate, dynamics of effective exchange rate, inflation, monetary policy rate, and real estate prices, etc.

6. According to paragraph 5.5.17 (a) of IFRS 9 'an entity shall measure expected credit losses of a financial instrument in a way that reflects an unbiased and probability weighted amount that is determined by evaluating a range of possible outcomes'. In order to ensure the unbiasedness of the results, it is preferable to use several economic scenarios, push these scenarios across credit expected loss inputs and then weight these scenario-conditional risk parameters by the scenario probabilities. Using a single macroeconomic scenario may not be appropriate if the relationship between credit losses and the macroeconomic variables is nonlinear. Even if the credit estimate is unbiased, a single weighted scenario may be undesirable as the standard emphasizes evaluating a range of outcomes, not a range of scenarios.

7. Given the fact that NBG provides macroeconomic forecast scenarios, for the purposes of paragraph 5.5.17 of IFRS 9, it is assumed that this information is available without undue cost or effort and therefore should be considered by FI in expected credit loss calculations.

8. Scenarios and list of variables are meant to be suggestive. This guideline is based on 'comply or explain' approach. FIs can seek for other reputable sources of macroeconomic forecast scenarios besides NBG and use their own judgement to choose the macro variables they find relevant for the credit risk analysis. However, when the FI uses other sources for the information that is also provided by NBG, the

FI should document and maintain strong justification regarding why it chose other source over NBG.

9. Besides macroeconomic scenarios, for the assessment of ECL, financial institutions are encouraged to incorporate expected changes in other sector specific factors.

10. Analyses, estimates, reviews and other loss allowance calculation methodology functions must be performed by competent and well-trained personnel and be well documented, in writing, with clear explanations of the supporting analyses and rationale;

Article 9. Review of impairment methodology

1. The methodology for the expected credit loss calculation should be reviewed regularly so that differences between loss estimates and actual losses are minimized (back testing/stress tests). The back tests should prove that existing impairment methodology is adequate by showing that difference between actual and estimated losses is statistically insignificant. The methodology shall entail proper definition for statistically insignificant differences. The review should take place at least on an annual basis. When new ECL estimation methods are introduced, the rationale should be documented and the credit loss results in case of the new and old methodology should be provided for the first year of the update.

2. FIs shall maintain proper documentation of impairment review results and related changes to key estimates and judgments. Validation results shall be reported to board of directors and senior management.

3. FIs should review and revise their existing trigger events to ensure that a trigger identifies stage 2 and stage 3 losses as early as possible. This should result in the earliest possible recognition of losses within the IFRS framework.

Article 10. Key management judgments, assumptions and estimates

1. Credit loss allowances should be determined based on informed management judgments to arrive at expected credit loss based on the facts and circumstances and forecasts pertaining at a point in time.

2. While experienced credit judgments may be necessary, the scope for actual discretion should be prudently limited and documentation should be in place to enable an understanding of the procedures performed and judgments made by management, particularly within the following constraints:
    a. Experienced credit judgments should be subject to established policies and procedures;
    b. There should be an approved and documented analytical framework for assessing loan quality, which is applied consistently over time;

3. Estimates should be based on reasonable and objective assumptions and should be supported by adequate documentation. The impairment methodology shall be regularly reviewed by independent reviewer.

4. The impairment methodology shall be approved by the FIs board or those charged with governance.

Article 11: Interest Income

1. Interest income on stage 1 and stage 2 loans should be recognized based on effective interest rate applied to gross carrying amount of exposure (that is carrying amount of exposure before adjusting for loss allowance).

2. For stage 3 exposures, recognition of interest income in accordance with the terms of the original loan agreement should cease; Interest income on stage 3 loan shall be measured on the basis of expected future cash flows discounted at the loan's original effective interest rate (OEIR). Changes in the estimated present value (PV) arising subsequent to initial recognition of impairment should be reflected in the statement of profit or loss in the current period as following: The increase in present value which is attributable to the passage of time should be reported as interest income and the present value of the changes in the expected cash flows amount should be reported as a charge or credit to impairment expense for loan losses;

Article 12. Modifications

1. According to IFRS 9 par 5.4.3, when contractual cash flows of an exposure are modified (due to whatever reason) and the modification does not result in derecognition, gross carrying amount of the exposure should be recalculated based on modified cash flows and original effective interest rate. The difference between modified gross carrying amount and unmodified gross carrying amount should be recognized in profit or loss as modification gain/loss.

2. Recognition of modification gain/loss in point 1 above should be made irrespective of existing ECL allowance of the exposure. The ECL should be recalculated separately and applied to modified gross carrying amount. The difference between initial ECL allowance and recalculated ECL allowance should be recognized in profit or loss in respective caption.

3. Application of requirements of this article might result in modification gain/loss and ECL charge/benefit having opposite signs; however, their sum should always be equal to change in net carrying amount of the exposure.

4. Modification of stage 2 or stage 3 exposure (that does not result in derecognition) does not automatically mean that the modified exposure qualifies for classification as stage 1 or stage 1/stage 2 exposure respectively. Only modifications that actually result in reduced credit risk on the exposure may lead to such changes in classifications.

Article 13. Write-offs

1. The FI should ensure that impaired exposure or part of it is written-off when there are no reasonable expectations of recovery (IFRS 9, par 5.4.4).

2. The exposure should be written off when:
   a. It is not legally enforceable to recover funds (or part of it):
      i. via sale or appropriate of collateral, and
      ii. from the borrower or from any third party;
   b. It is legally enforceable to recover funds from the borrower or any third party, but there is very low probability of happening so.

3. For retail portfolio, statistical analysis might be necessary for identification of proper write-off period. For example, it would be inappropriate to maintain gross amount of already 2 years past due retail exposures for which statistical analysis has shown that there is extremely low probability that the exposure will be repaid after one year is passed since default.

4. Considering requirements of this article, the FIs should disclose both contractual amount and unrepaid portion of exposures that were written-off during the reporting period. Level of details of the disclosure should match level of details of other information disclosed regarding credit losses. Comparative information should also be disclosed.

5. FI should maintain proper documentation regarding write-off policy. The write-off policy and changes in it should not be used to artificially improve portfolio quality. Change to the policy should be made only if the change results in better estimate on recoverability of impaired exposures (this might be the case, for example, if new permanent source of data becomes available or any specific fault of existing policy is identified).

Article 14. General disclosure requirements

1. FIs should disclose their trigger events in financial statements for each loan asset portfolio. Such disclosures should be detailed enough and should not be limited to disclosing generic triggers extracted from accounting standards.

2. FIs should in their financial statements disclose the thresholds for individually significant exposures and related individual or group level credit loss assessment methodology, including methodology of grouping exposures by credit risk characteristics. Disclosures should not be limited to only generic statements extracted from accounting standards.

3. Judgments, assumptions and estimates relating to loss allowance calculation should be disclosed in the financial statements to allow users see in a more transparent way the description of those judgments, assumptions and estimates and impact that such key judgments, estimates and assumptions have on the loss allowance.