Credit Risk

Exposure Draft

Applicable to:

1. Licensed banks
2. Licensed investment banks
3. Licensed Islamic banks
4. Licensed international Islamic banks
5. Licensed insurers
6. Licensed takaful operators
7. Prescribed development financial institutions
8. Financial holding companies

Issued on: 19 January 2017

BNM/RH/ED 028-3

This exposure draft sets out the Bank's proposed regulatory requirements on credit risk management for licensed persons, prescribed development financial institutions and financial holding companies.

The proposals seek to ensure that the Bank's key expectations and requirements on credit risk management remain effective moving forward. In particular, the proposals aim to clarify and reinforce expectations and requirements on broader governance arrangements by the board and the financial institutions' risk management function, particularly within the context of credit decision-making. They complement the requirements in *Risk Governance,* which sets out the overarching principles for sound risk management. The need to manage exceptional credits and elevate credit loss estimation standards has also been given emphasis, amid an environment of heightened competition and uncertainty. As financial institutions continue to expand domestically and abroad, the management of concentration risk, country and transfer risk, as well as group-wide credit risk oversight are also key areas of focus.

The Bank invites written feedback on the proposed regulatory requirements, including suggestions on areas to be clarified and alternative proposals that the Bank should consider. The written feedback should be supported with clear rationale and accompanying evidence or illustrations, as appropriate to facilitate an effective review of this exposure draft.

Responses must be submitted by 31 March 2017 to:

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PART A OVERVIEW

1 Introduction

1.1 Credit risk[1] is the risk of a counterparty failing to perform its obligations. Over the years, the nature, scale and complexity of credit risk undertaken by financial institutions have evolved amid significant transformations to the Malaysian financial landscape. Robust credit risk management therefore continues to be an integral component of the long-term success of any financial institution. At a broader level, this is also critical for the sustainable development of the real economy by supporting financial intermediation and managing the build-up of financial imbalances in the financial system.

1.2 While the board and senior management play a key role in credit risk oversight, the responsibility for credit risk management is spread throughout a financial institution. In particular, business lines are primarily responsible for managing credit risks inherent in day-to-day activities, such as where credit officers evaluate customers for potential credit opportunities. Meanwhile, the risk management function serves to provide an independent and where appropriate, countervailing perspective on credit risk management issues, including credit decisions and overall credit quality. These arrangements are in turn supported by an internal audit function that provides assurance on the quality and effectiveness of the institution's internal controls, systems and processes for credit risk oversight.

1.3 A comprehensive approach to managing credit risk is important, encompassing both on- and off-balance sheet activities, capturing sources of credit risk beyond those relating to the provision of finance, such as through the purchase of debt securities, and entering into securities financing transactions and derivatives contracts. This also entails a sound understanding of the inter-linkages between credit risk and other risks. For example, credit risks arising from cross-border lending are interlinked with country and transfer risks, thereby requiring an enhanced understanding and ongoing monitoring of country-specific factors. Adverse trends in financial markets, including interest rate movements, can also impair the creditworthiness of issuers of debt securities. In addition, relevant considerations under accounting standards, such as considerations on classification, measurement and impairment, must be taken into account and be well-integrated with credit risk management practices of the financial institution.

1.4 This policy document seeks to ensure that credit risk management practices of financial institutions remain effective moving forward, amid the increased size and diversity of product offerings by financial institutions, greater internationalisation of the financial system, as well as the growing role of domestic capital markets. These expectations and requirements complement *Risk Governance* which sets out the overarching principles for sound risk

[1] Including counterparty credit risk.

management.

1.5 Financial institutions are required to implement, at the minimum, the standards set out in this policy document and be able to demonstrate that their risk management arrangements are operating effectively and remain commensurate to their respective risk profiles.

2 Applicability

2.1 This policy document is applicable to financial institutions as defined in paragraph 5.2 in accordance with the following:

(a) on an entity basis for all financial institutions excluding financial holding companies; and

(b) on a consolidated basis for all financial institutions in respect of paragraphs 8, 13, 14 and 16.

3 Legal provisions

3.1 This policy document is issued pursuant to–

(a) sections 47(1) and 266 of the Financial Services Act 2013 (FSA);

(b) sections 57(1) and 277 of the Islamic Financial Services Act 2013 (IFSA); and

(c) sections 41(1) and 126 of the Development Financial Institutions Act 2002 (DFIA).

4 Effective date

4.1 This policy document comes into effect on 1 July 2017, subject to the following transitional arrangements:

Level	Type of financial institution	Effective date
Entity	Licensed banks Licensed investment banks Licensed Islamic banks Licensed international Islamic banks	1 July 2017
	Licensed insurers Licensed takaful operators Prescribed development financial institutions	1 July 2018
Consolidated	All financial institutions	1 July 2018

Question 1

Are the proposed transitional arrangements appropriate to facilitate compliance on an entity and consolidated basis? Alternative proposals, if any, must be supported by a detailed assessment of the specific implementation challenges and the extent to which these challenges could affect the ability of your financial institution to comply with all relevant requirements by the proposed effective date.

5 Interpretation

5.1 The terms and expressions used in this policy document shall have the same meanings assigned to them in the FSA, IFSA or DFIA, as the case may be, unless otherwise defined in this policy document.

5.2 For the purpose of this policy document–

"**S**" denotes a standard, an obligation, a requirement, specification, direction, condition and any interpretative, supplemental and transitional provisions that must be complied with. Non-compliance may result in enforcement action;

"**G**" denotes guidance which may consist of statements or information intended to promote common understanding and advice or recommendations that are encouraged to be adopted;

"board" means the board of directors of a financial institution, including a committee of the board where the responsibilities of the board set out in this policy document have been delegated to such a committee;

"control function" refers to a function that has a responsibility independent from the business lines to provide objective assessments, reporting and assurance on the effectiveness of a financial institution's policies and operations, and its compliance with legal and regulatory obligations. This includes the risk management function, the compliance function and the internal audit function;

"counterparty" refers to any person with whom a financial institution has a credit exposure;

"country risk" is the risk of exposure to loss caused by events in a foreign country;

"credit approval authority" refers to a credit committee or any officer that is granted the authority to approve credits within the financial institution;

"credit committee" refers to a group of individuals that has been granted the authority to approve credits within the financial institution, whereby such individuals may either be officers or directors;

"credit exposure" refers to all direct and indirect[2] claims[3], commitments and contingent liabilities arising from on- and off-balance sheet transactions in ringgit and foreign currency denomination which include, but are not limited to–

(a) outstanding loans, financing, advances and receivables;

(b) deposit and investment account placements, and margins held with

[2] Including exposures to schemes with underlying assets (e.g. collective investment schemes and securitisation transactions) that may give rise to credit risks.

[3] Including exposures arising from reinsurance or retakaful contracts.

counterparties;
(c) debt securities held;
(d) exposures arising from securities financing transactions[4] and derivative transactions; and
(e) exposures arising from off-balance sheet facilities.

"credit risk assessment" refers to the assessment of the credit risk of a counterparty prior to making a decision that results in a financial institution undertaking a credit exposure;

"exceptional credit" refers to any provision of finance that deviates from a financial institution's approved credit risk policy;

"exposure at default (EAD)" refers to the gross credit exposure upon the default of a counterparty, which must include–
(a) the undrawn portion of any off-balance sheet facilities; and
(b) in respect of derivatives transactions, the replacement cost and potential future exposure;

"financial institution" refers to a–
(a) licensed person under the FSA and IFSA;
(b) development financial institution prescribed under the DFIA; and
(c) where relevant, financial holding company under the FSA and IFSA;

"loss given default (LGD)" refers to the percentage of an outstanding claim on a counterparty that will likely not be recovered in the event of a default;

"probability of default (PD)" refers to the likelihood of a counterparty defaulting on its contractual obligations to a financial institution over a given time horizon;

"problem credit" is as specified in paragraph 15.2 of this policy document;

"risk appetite" refers to the aggregate level and types of risk a financial institution is willing to assume, decided in advance and within its risk capacity, to achieve its business objectives and strategies;

"risk management function" refers to a control function that is independent from revenue-generating functions, such as business lines, and is charged with the responsibility to provide risk perspectives and to identify, measure, monitor, control and report the financial institution's overall risk exposures;

"senior management" refers to the chief executive officer (CEO) and senior officers;

[4] Such as repurchase agreements, reverse repurchase agreements, security lending and borrowing, and margin lending transactions.

“significant credit exposure” refers to a credit exposure, or a homogenous portfolio of credit exposures, that has a material impact on a financial institution’s credit risk profile, including where–

(a) the credit exposure or the portfolio of credit exposures is currently or expected[5] to be large relative to the financial institution’s total credit portfolio; and

(b) a default of, significant deterioration in credit risk of, or adverse news about a counterparty may have significant financial or reputational implications on the financial institution; and

“transfer risk” is the risk that a counterparty will not be able to convert local currency into foreign currency and so will be unable to make debt service payments in foreign currency.

6 Related legal instruments and policy documents

6.1 This policy document must be read together with other relevant legal instruments and policy documents that have been issued by the Bank, in particular–

(a) *Risk Governance;*

(b) *Single Counterparty Exposure Limit;* and

(c) *Single Counterparty Exposure Limit for Islamic Banking Institutions.*

7 Policy documents superseded

7.1 This policy document supersedes the following guidelines and policy documents:

(a) *Best Practices for the Management of Credit Risk* issued on 5 September 2001;

(b) *Guidelines on Best Practices for the Management of Credit Risk for Development Financial Institutions* issued on 27 July 2009;

(c) *Best Practices for the Management of Credit Risk – Accreditation Requirement for Credit Personnel* issued on 30 August 2006; and

(d) paragraph 8 of the *Prudential Standards on Securitisation Transactions* issued on 23 October 2009.

[5] This may occur as a consequence of a change in a financial institution’s credit risk strategy, such as where the financial institution intends to penetrate a particular market segment where it previously had little or no exposure. In this respect, a credit portfolio that is currently of a small size may be expected to become material and must therefore be considered as a “significant credit exposure”.

PART B POLICY REQUIREMENTS

8 General requirements

S 8.1 The board has the overall responsibility to promote a sound credit risk management environment to support prudent credit decision-making. In fulfilling this role, the board must annually approve the financial institution's credit risk strategy, which articulates the financial institution's overall direction for its credit activities. An effective credit risk strategy must ultimately support the long-term viability of the financial institution through an optimal balance between the financial institution's credit quality, profitability and growth objectives.

S 8.2 In reviewing and approving the credit risk strategy, the board must consider the interactions between the credit risk strategy and institution-specific factors – such as the financial institution's risk appetite, existing levels of capital and provisioning needs in business-as-usual and stressed scenarios, adequacy of internal resources – as well as the wider operating environment. To this end, the financial institution must obtain an appropriate mix of views from both business lines and control functions.

S 8.3 Senior management shall be collectively responsible for the effective management of credit risk in line with the financial institution's approved credit risk strategy. Therefore, senior management must ensure that the credit risk strategy is implemented effectively, including by establishing a board-approved credit risk policy. At a minimum, the credit risk policy must cover areas specified in paragraphs 8 to 17. The credit risk policy must be periodically reviewed and updated by senior management to reflect changes to the credit risk strategy or the financial institution's wider operating environment. In addition, appropriate remedial or disciplinary actions must be taken if the credit risk policy is not complied with, supported by timely reporting to the board on any credit risk management issues.

S 8.4 A financial institution must establish an internal policy that sets out the appropriate training and continuous professional development needs for officers undertaking credit risk management responsibilities, including those in business lines and the risk management function. This must be done by the financial institution to ensure that such officers have the necessary competencies and experience to perform their roles effectively.

G 8.5 A financial institution should consider mandating or encouraging the relevant officers to possess accredited qualifications in the area of credit risk management as one of the means to develop adequate competence and expertise on credit risk management.

9 Credit risk assessment

G 9.1 A comprehensive approach to credit risk assessment provides financial institutions with an in-depth understanding of the key characteristics of credit exposures to facilitate sound credit decision-making.

S 9.2 A financial institution must establish sound and well-defined credit acceptance criteria to facilitate an ex-ante evaluation of prospective credits. The credit acceptance criteria must take into consideration common credit characteristics for distinct categories of counterparties or facilities, and the boundaries of the credit risk strategy and credit risk policy. Such criteria must also clearly define thresholds or qualifying features for acceptable counterparties and address key terms and conditions. Key terms and conditions include the type of facility[6], facility size, repayment schedule[7], type of Shariah contract and other contractual obligations.

S 9.3 A financial institution must primarily focus on the counterparty's ability and willingness to honour its credit obligations under normal and adverse economic conditions when undertaking the credit risk assessment for a credit facility. This assessment must take into consideration a holistic range of related factors, including key terms and conditions as described in paragraph 9.2. In doing so, the financial institution must assure itself that adequate supporting evidence of the purpose of the credit and repayment capacity of the counterparty is obtained and verified.

S 9.4 In respect of a syndicated credit, a financial institution must perform its own credit risk assessment and review of the syndicated terms prior to committing to such syndication.

S 9.5 In respect of deposit placements, a financial institution must assess the ongoing ability of the counterparty to honour any interest/profit payments and allow timely withdrawals of such placements.

S 9.6 In respect of treasury and capital market activities, such as in the trading of debt securities or derivative instruments, a financial institution must assess the counterparty's ability to service contractual payments by considering the structure of the product, ratings and the credit spread.

S 9.7 In the case of credit exposures arising from the ceding of insurance/takaful risk to a reinsurer/retakaful operator, the financial institution must assess the capability of the reinsurer/retakaful operator to fulfil its financial obligations. This includes assessing factors pertaining to the financial standing of the reinsurer/retakaful operator, such as the asset size and composition, level of premiums, solvency margin, technical provision levels and profitability.

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[6] For example, term loan or deposit placement.
[7] This must consider the timing of cash flows.

S 9.8 A financial institution must perform the credit risk assessment holistically, taking into account various relevant factors. More specifically, a financial institution must not mechanistically rely on any single factor to perform the credit risk assessment. For instance, the good reputation of a counterparty or the quality of any credit risk mitigation arrangement does not preclude the financial institution from assessing the repayment capacity of the underlying counterparty for a particular transaction.

S 9.9 Where external ratings are used for the credit risk assessment, the financial institution must demonstrate a sound understanding of the assessment methodology adopted by the rating agency and satisfy itself that the rating agency has evaluated the credit risk of the counterparty in a manner that fulfils the requirements set out in paragraph 9.

S 9.10 Where relevant, a financial institution must also evaluate the country risk and transfer risk[8] inherent in credit exposures, namely sovereign risk, transferability and convertibility risk, and domestic economic credit risk. In doing so, the financial institution must conduct a quantitative and qualitative assessment of country-specific factors such as economic and financial conditions, socio-political stability, the legal and regulatory environment and existing government policies.

S 9.11 Where a credit is supported by credit risk mitigation arrangements, a financial institution must assess factors that can affect the effectiveness of a credit risk mitigant, including legal enforceability, conditionality and in respect of guarantees or credit derivatives, the nature of the claim in a credit event[9]. In addition, the contractual terms of credit must be commensurate with the effectiveness of such arrangements. In general, the credit decision-making process shall only account for legally enforceable arrangements[10], such as explicit guarantees.

S 9.12 In respect of collateral, a financial institution must establish internal processes and procedures that support reliable valuation, adequate monitoring of the collateral's location and utilisation, and timely liquidation. In particular, the financial institution must assess the marketability of the collateral and identify any potential encumbrances in securing control over the collateral. In doing so, the financial institution must satisfy itself that collateral valuations reflect the likely realisable value in a credit event.

[8] Transfer risk can arise from currency exchange restrictions imposed by the government in a counterparty's country of incorporation or residence.

[9] Potential impediments may arise if the financial institution's claim is: (a) indirect; or (b) not explicitly referenced to the credit exposure which is guaranteed or for which protection has been bought. For credit derivatives in particular, challenges may also arise from mismatches between the credit exposure and the reference obligation or currency of the credit protection provided by the protection seller.

[10] For the avoidance of doubt, where an arrangement is not legally enforceable, such as in the form of an implicit guarantee, letter of comfort or expectation of support, the financial institution must not factor in such an arrangement in the credit decision-making process.

S 9.13 For purposes of paragraph 9.12, when conducting collateral valuations, the financial institution must compare the estimates against the realised values in a credit event. Where the value of a particular collateral is likely to be volatile or where there is a lack of data or experience in valuing the collateral, the financial institution must adopt a conservative estimate in valuing such collateral.

S 9.14 Where there is a risk that the effectiveness of credit risk mitigation arrangements may be compromised, a financial institution must put in place appropriate safeguards including by applying more conservative assumptions when recognising these mitigants. For instance, a larger haircut could be applied on collateral values or in the case of guarantees, the rating of the guarantor could be notched down.

S 9.15 Where valuations are obtained from an external party, the financial institution must challenge key underlying assumptions of the valuation approach used.

S 9.16 A financial institution must assess the correlation between the value of collateral or the strength of the guarantor, vis-à-vis the creditworthiness of the original counterparty.

S 9.17 A financial institution must undertake a credit risk assessment on guarantors as though the financial institution is exposed directly to the guarantor.

10 Credit approval

G 10.1 A well-defined authority structure for approving credits is underpinned by a clear delineation of duties, and an appropriate separation between credit risk oversight and decision-making.

S 10.2 A financial institution must establish a board-approved authority structure for any credits that have undergone the credit risk assessment process. The structure must set out the limits granted to each credit approval authority and circumstances under which the delegation of authority is allowed. The financial institution must ensure that the authority structure mitigates potential conflicts of interest by individuals within the credit approval authority.

S 10.3 Where the board is involved in the credit approval process, the board's capacity to perform its credit risk oversight role must not be compromised and must be without undue influence from any party. In this respect, the nature and extent of board involvement in the credit approval process, including in respect of veto powers to reject credits, must not place undue demands on the time and resources of the board. Therefore, the board shall only be a credit approval authority in limited circumstances that are clearly defined and documented. These circumstances may include where a credit is inconsistent with the financial institution's risk appetite or where required under legal or regulatory requirements.

S 10.4 The involvement of the chief risk officer (CRO)[11] is key to strengthen the overall management of credit risk. In particular, the CRO must provide an independent risk perspective as part of the credit approval process, supported by clear avenues to escalate uninhibited concerns on specific credit decisions to the board or senior management, where appropriate. Importantly, the financial institution must establish arrangements to preserve the independence of the CRO throughout the credit approval process. These include ensuring that the CRO is not placed in a position of conflict, having proper documentation of the CRO's accountabilities[12] and ensuring that the CRO's compensation structure does not result in perverse incentives[13].

S 10.5 When approving credits, a financial institution must ensure that the credit approval authority undertakes a balanced assessment which has regard to the appropriateness of the contractual terms of the credit to be granted, the risk management function's assessment and impact on the overall credit risk profile if the credit is approved. The considerations underlying all credit decisions, including any key reservations raised throughout the credit approval process, must be clearly documented.

11 Exceptional credits

G 11.1 There may be circumstances where credits that do not satisfy a financial institution's pre-defined governance and risk management arrangements, such as the risk appetite, credit risk strategy and credit risk policy, represent legitimate credit needs with sound credit risk profiles. This can arise where gaps in the credit risk policy or credit risk management practices exist due to the practical challenge of identifying all probable circumstances under which credits may be extended. Notwithstanding these considerations, exceptional credits warrant greater scrutiny by the financial institution.

S 11.2 A financial institution must ensure that exceptional credits, if granted, are underpinned by sound credit risk management practices. Therefore, the financial institution must establish systems and controls for managing and monitoring exceptional credits, including to–

(a) identify the appropriate credit approval authority to approve exceptional credits;

(b) set conditions for the approval of exceptional credits to ensure that the contractual terms of such credits are commensurate with the associated credit risks[14];

(c) ensure that exposures to exceptional credits remain controlled by way of established limits within the credit risk policy;

(d) document the assessment leading to the approval of exceptional credits, including the rationale and specific areas where the credit is inconsistent

[11] For purposes of paragraph 10.4, any reference to the CRO shall include any officers responsible for risk management involved in the credit approval process.

[12] In the case of a credit committee, the role of the CRO may be outlined in the committee's terms of reference or charter.

[13] For example, the CRO's compensation should not be primarily tied to credit growth.

[14] For example, this may result in a lower exposure limit to the credit applicant, higher pricing or requiring additional guarantees or collateral.

with the credit risk policy; and

(e) implement processes to monitor the performance of exceptional credits, including the default rates, recovery rates and effectiveness of risk mitigation arrangements.

S 11.3 Where exceptional credits have been granted, a financial institution must draw on these experiences to continuously strengthen its credit risk management practices, including by refining the credit risk strategy or specific areas in its credit risk policy.

12 Credit risk measurement

G 12.1 A robust approach to credit risk measurement is key to provide the financial institution with a complete and accurate understanding of the credit risk profile of its portfolio, thereby strengthening the feedback loop of information for more effective planning and decision-making.

S 12.2 A financial institution must establish an approach for measuring the risks in all credit exposures, with the capability to aggregate and appropriately segment different credit exposures based on shared credit risk characteristics[15].

S 12.3 The credit risk measurement outputs must also be duly considered by the financial institution in developing the credit risk strategy and credit risk policy, particularly in areas of credit approval, pricing, limit-setting, identification of problem credits, provisioning and compensation design.

Methodology

S 12.4 A financial institution must have in place appropriate credit risk measurement methodologies to estimate credit losses, having regard to the nature, scale and complexity of its credit exposures. At a minimum, the financial institution must estimate the PD, LGD and EAD for its significant credit exposures.

> **Question 2**
> Please describe the credit loss estimation approach currently adopted by your financial institution in cases where it is different from the methodologies specified in paragraph 12.4. Please detail out the differences in the key features, assumptions, outputs, advantages and limitations of both loss estimation approaches.

G 12.5 The level of sophistication of the credit risk measurement methodologies, including in estimating PD, LGD and EAD, may vary across credit exposures. A financial institution is therefore expected to consider the availability of historical data and portfolio-specific factors, such as the number of customers, and the homogeneity and size of individual exposures. Statistically-driven methodologies[16] are generally more appropriate where the credit portfolio is homogenous with large volumes of small individual exposures. Conversely, judgment-based methodologies may be more appropriate where the credit

[15] For example, by groups of connected counterparties, product type and risk characteristics.
[16] Such as Monte Carlo simulations, multiple regressions and neural network models.

portfolio is heterogeneous with small volumes of large individual credit exposures.

S 12.6 Similar to paragraph 9.9, where external ratings are leveraged on for purposes of credit risk measurement[17], the financial institution must satisfy itself that the methodology adopted by the rating agency fulfils requirements set out in paragraph 12.

G 12.7 For securities financing transactions and derivatives contracts that are governed by a legally enforceable netting agreement, a financial institution may net transactions with a counterparty when estimating the EAD.

S 12.8 A financial institution must ensure that the credit risk measurement methodologies are based on a comprehensive range of risk factors. The methodologies must capture all relevant macroeconomic, transaction and counterparty-related factors, and the impact of country-specific factors[18].

S 12.9 In respect of qualitative[19] risk factors within the credit risk measurement methodologies, the financial institution must establish clearly defined criteria to differentiate between varying credit risk levels for a particular risk factor.

S 12.10 A financial institution must establish an appropriate number of rating grades to facilitate meaningful differentiation of credit exposures and consistent loss estimation practices across credit exposures.

G 12.11 In respect of paragraph 12.10, a financial institution is expected to assess whether there is a significant concentration of counterparties within a particular rating grade, which may indicate a lack of granularity in the design of the credit risk measurement methodology. In defining rating grades, a financial institution should include sufficiently granular triggers or factors to enable the identification of both migration of credit risk and significant changes in credit risk that result in a change in rating grades of credit exposures.

S 12.12 A financial institution must be conservative in adjusting the rating grade for a particular credit. In this regard, a financial institution must apply more stringent criteria for upgrades compared to downgrades to reflect changes in the level of credit risk. In particular, rating upgrades must be supported by evidence of a sustained improvement in the repayment capacity, gearing, associated cash flows and financial position of a counterparty, over a specified period. In contrast, a shorter specified period must be considered when demonstrating a sustained deterioration in credit quality to effect a rating downgrade.

[17] Such as for investments in sovereign debt securities, deposit placements in financial institutions and ceding of insurance risk to a reinsurer/retakaful operator.

[18] This may include establishing a country risk rating system, whereby the rating assigned to a specific country is linked to pre-defined adjustments to ratings for counterparties which are domiciled in the country.

[19] Such as when assessing the management experience of a corporate borrower in respect of the specific business sector for which the credit is granted.

Validation of credit risk measurement methodologies

S 12.13 A financial institution must establish a framework to validate its credit risk measurement methodologies to ensure that such methodologies are conceptually sound, fit for purpose and remain relevant on an ongoing basis. The framework must clearly set out the responsibilities of officers within the financial institution in respect of the validation process of the credit risk measurement methodologies.

S 12.14 A financial institution must ensure that the objectivity of the validation process is preserved. In this respect, the financial institution must ensure that validation is undertaken by a party that is independent from those who have developed the credit risk measurement methodologies.

S 12.15 A financial institution must ensure that the scope of validation is comprehensive, covering both the quantitative and qualitative aspects of credit risk measurement methodologies.

S 12.16 In respect of paragraph 12.15, at a minimum, the quantitative aspects must include assessments on data quality, the appropriateness and relevance of risk factors used and back-testing. Whereas, qualitative aspects must include the adequacy and effectiveness of internal processes, sufficiency of documentation, and the level of expertise and competence of relevant officers.

S 12.17 The financial institution must ensure that any weaknesses in the credit risk measurement methodologies identified during the validation process are rectified and reported to senior management, and validation results are reported to the board. In this respect, the financial institution must clearly define the appropriate remedial actions to be taken for different degrees of weaknesses, including circumstances where a credit risk measurement methodology may warrant further recalibration or full replacement.

S 12.18 The financial institution must adopt alternative approaches to validate the credit risk measurement methodologies where insufficient data is a constraint (for example, insufficient historical data to back-test the output of the methodologies). This may include a review of the methodology's output by credit experts and a comparison of the methodology's output against other methodologies and market data, such as credit spreads.

Pre-implementation validation

S 12.19 As part of the pre-implementation validation process, a financial institution must ensure that information used to develop the credit risk measurement methodologies–

(a) is representative of the relevant portfolio and in line with the financial institution's overall risk appetite and credit risk strategy; and

(b) meets internally established data quality standards.

S 12.20 Where credit risk measurement methodologies are judgment-based, the financial institution must adopt suitable assessment techniques to ascertain the predictive capability of such methodologies.

S 12.21 Where credit risk measurement methodologies are externally developed, the financial institution must satisfy itself that such methodologies are supported by a sound analytical framework and sufficient empirical evidence. This includes by obtaining more granular information from the external party.

Post-implementation validation

S 12.22 A financial institution must periodically review whether its credit risk measurement methodologies continue to be relevant. At a minimum, this must include an assessment of the accuracy and discriminatory power of the credit risk measurement methodologies[20], whether the risk factors underlying the methodologies remain appropriate and whether the existing methodologies continue to suit the nature of the portfolio.

Question 3
Please identify and detail out specific challenges that your financial institution may face in implementing the requirements in paragraph 12.

13 Credit risk monitoring

G 13.1 Credit risk monitoring refers to the ongoing monitoring of the performance of individual credit exposures and the overall credit portfolio. Having a robust framework to support monitoring activities is essential for a financial institution to identify changes in its credit risk profile in a timely manner. In addition, well-defined reporting structures will ensure that key monitoring outcomes, such as those relating to significant credit exposures, are escalated appropriately to support oversight and decision-making by the board and senior management.

S 13.2 A financial institution must establish credit risk monitoring procedures to identify early signs of deterioration in a counterparty's ability to honour its obligations, and assess whether credit exposures remain consistent with the contractual terms, risk appetite and credit risk policy. In doing so, the monitoring procedures must take into account the utilisation of off-balance sheet facilities, and sources and degree of credit concentration risk.

S 13.3 In performing credit risk monitoring, a financial institution must consider the potential impact of changes in the operating environment, whether domestic or abroad[21], on the credit risk profile of an individual credit exposure and the

[20] Tools that could facilitate this assessment include the Accuracy Ratio (AR), Gini Coefficient and the area under the Receiver Operating Characteristic (ROC) curve.
[21] May include a foreign counterparty's ability to obtain foreign currency to service cross-border obligations.

overall credit portfolio, such as those pertaining to interest rates[22], inflation, asset prices, competition and socio-political conditions.

S 13.4 The roles, responsibilities and reporting structure pertaining to monitoring activities must be defined by the financial institution in a manner that facilitates objectivity in credit risk monitoring. Where a monitoring activity or function is carried out by business units, appropriate safeguards must be in place to mitigate the potential for undue suppression of information to the board and senior management, such as through a periodic and independent evaluation[23] of the scope, timeliness and quality of information reported.

S 13.5 The monitoring frequency of credit exposures must be commensurate with the nature of credit exposures and facilitate timely escalation of emerging issues to support oversight and decision-making by the board and senior management. For example, where the value of a particular credit exposure can change due to market fluctuations, such as in the case of derivative transactions, a financial institution must monitor such exposures more frequently.

S 13.6 In respect of credit exposures with a bullet repayment structure, a financial institution must monitor such credit exposures periodically throughout its lifetime and not only when it is closer to the repayment date. This is to ensure that any potential deterioration in the credit risk of the counterparty can be detected early.

14 Credit concentration risk

S 14.1 A financial institution must have adequate processes that enable the effective management of credit concentration risk, particularly where the potential losses can jeopardise the solvency of, or public confidence in, the financial institution.

S 14.2 A financial institution must identify the sources and degree of credit concentration risk in its portfolio, including the following:

(a) single counterparties and groups of connected counterparties[24];

(b) counterparties in the same industry, economic sector or geographic region[25];

(c) counterparties whose financial performance is dependent on the same activity or commodity; and

(d) exposures in particular asset classes, products, collateral or currencies.

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[22] For example, adverse interest rate movements may increase the debt service ratio of a counterparty with a floating rate loan, thereby affecting the repayment capability of the counterparty.

[23] This may be achieved where the monitoring activity falls within the scope of the independent credit review.

[24] Where relevant, including those counterparties identified as "connected" in the *Single Counterparty Exposure Limit* and *Single Counterparty Exposure Limit for Islamic Banking Institutions*.

[25] Including in respect of counterparties' country of incorporation or residence.

S 14.3 A financial institution must establish appropriate methodologies[26] to assess and manage credit concentration risk. The methodologies must incorporate correlations between credit exposures, taking into account the historical trend of defaults, credit losses or relevant proxies[27] across an appropriate time horizon. At a minimum, the assessment of credit concentration risk must include an aggregation of credit exposures to single counterparties and groups of connected counterparties.

Question 4 In evaluating credit concentration risk, how does your financial institution assess the effect of correlation between credit exposures?

S 14.4 As part of prudent management of credit concentration risk, the financial institution must establish exposure limits based on clear rationale and supported by an appropriate analytical framework. These limits must be supplemented with early warning indicators to identify credit exposures approaching these limits. These indicators must be calibrated such that the financial institution has sufficient time to undertake necessary actions to maintain exposures at a prudent and manageable level.

15 Problem credits

G 15.1 Despite financial institutions making credit decisions based on prudent considerations, the risk profile of a credit exposure can deteriorate over time. This may occur due to a variety of reasons, including a sudden downturn in the economy leading to a default in payments by a counterparty's customers, thereby affecting the repayment capability of the counterparty itself. Continued vigilance of credit exposures is therefore crucial, particularly to identify weaknesses at an early stage where more options may be available to manage the resultant risks.

S 15.2 Problem credits encompass all credit exposures for which there is reason to believe that a portion or all amounts due will not be repaid or recovered in accordance with the contractual terms. A financial institution must establish criteria for identifying problem credits. At a minimum, a credit exposure must be classified as a "problem credit" if any of the following are met:

(a) the counterparty is experiencing financial difficulty in meeting its financial obligations, such as where the counterparty is currently past due on any of its material obligations;

(b) the financial institution has granted a concession following an increase in credit risk of the counterparty, such as by making changes to contractual terms, that the financial institution would not otherwise consider under normal circumstances; or

(c) under the relevant accounting standards, the credit is deemed to have experienced a significant deterioration in credit risk, whether due to

[26] The sophistication of the methodology may vary, depending on the size, nature and complexity of the credit portfolio. Examples of methodologies to identify or measure concentration risk include the Herfindahl-Hirschman Index (HHI), Gordy Granularity Adjustment (GA) and economic capital modelling approaches.

[27] Such as sectoral stock market indices.

counterparty-specific factors or those relating to macroeconomic and sectoral considerations.

S 15.3 The management of problem credits must be undertaken by the financial institution in a structured and targeted manner, with a focus on improving recovery outcomes and providing feedback to further strengthen the financial institution's credit risk strategy and credit risk policy. In supporting this outcome, the financial institution must clearly define the responsibilities for identifying and managing problem credits[28], and establish processes that set out the relevant remedial plans[29]. Problem credits that are material must be managed by a specialised team with the relevant expertise and which is independent from the credit approval authority or other officers involved in the credit decision.

S 15.4 A financial institution must conduct periodic reviews to identify the key drivers leading to significant credit exposures being classified as problem credits and communicate the outcome of this review to the board. The review must be undertaken in a comprehensive manner, including to assess the timeliness of problem identification, accuracy of collateral valuation and effectiveness of contractual terms.

S 15.5 In respect of rescheduled and restructured credits, a financial institution must establish controls to avoid 'ever-greening' of credits.

S 15.6 Write-offs must be undertaken by the financial institution in a timely manner and reflect realistic repayment and recovery expectations. To this end, the financial institution must establish a board-approved policy for write-offs that, at a minimum, sets out the circumstances, conditions and approving authority under which a credit can be written-off.

16 Credit risk reporting

S 16.1 In addition to the requirements under Principle 9 of *Risk Governance*, a financial institution must ensure that credit risk reports provide important insights on credit quality and are submitted in a timely manner to the board and senior management.

S 16.2 A financial institution must ensure that credit risk reports to the board and senior management are prepared in a manner that clearly explains and gives sufficient prominence to significant credit risk issues and developments that may materially impact the financial institution. In particular, the structure, depth and coverage of the reports must enable the board and senior management to–

(a) relate the information being presented to the financial institution's credit risk strategy, risk appetite and credit risk policy, and to identify any of

[28] Such as those related to enforcing recourse to a guarantor, foreclosing collateral, rescheduling or restructuring a credit, and undertaking write-offs.

[29] Such as the handling of rescheduled and restructured facilities, negotiation, management and liquidation of collateral, and monitoring of debt recovery performance.

these arrangements that need to be reviewed;

(b) be aware of significant credit exposures, both on an individual and aggregated basis; and

(c) assess the need for measures to mitigate any emerging risks[30].

17 Independent credit review

S 17.1 An independent credit review must be undertaken by the financial institution at least annually in accordance with paragraphs 17.2 to 17.4, to ensure that credit decision-making remains consistent with the financial institution's overall credit risk management arrangements. In this respect, the financial institution must ensure that this review is not undertaken by the internal audit function or any functions within the scope of the review, such as those involved in credit risk assessment and credit approval.

S 17.2 A financial institution must ensure that the scope, depth and frequency of the independent credit review is commensurate with the significance of a particular area or activity to the financial institution's credit risk profile.

S 17.3 At a minimum, the independent credit review must include assessments of–

(a) appropriateness of the credit risk strategy and credit risk policy given changes in the operating environment;

(b) rigour of credit risk assessment and credit approval processes, including in respect of the scope of information obtained for credit decisions;

(c) whether credit decisions are in accordance with the credit risk strategy, credit risk policy, and relevant legal and regulatory requirements;

(d) scope, effectiveness and timeliness of credit risk monitoring activities;

(e) accuracy and timeliness of ratings assigned to counterparties;

(f) appropriateness of credit classifications and provisioning levels; and

(g) effectiveness of credit risk reporting, such as whether credit risk reports are comprehensive (with sufficient granularity) and whether sufficient time is provided for the board or senior management to intervene.

S 17.4 A financial institution must ensure that the outcomes of, including any recommendations arising from, independent credit reviews are clearly documented and escalated directly to the board and senior management.

[30] Including significant changes in the conditions of a country where the financial institution has credit exposures.