



MEFMI

Macroeconomic and Financial Management
Institute of Eastern and Southern Africa



RISK BASED SUPERVISION: GUIDELINES FOR SUPERVISION OF BANKS

TABLE OF CONTENTS

ABBREVIATIONS	iii
FOREWORD	v
PREAMBLE BY THE DIRECTOR OF FINANCIAL SECTOR MANAGEMENT	vii
1. EXECUTIVE SUMMARY	1
2. RATIONALE FOR RISK BASED SUPERVISION.....	6
3. PROPOSED RISK-BASED SUPERVISION FRAMEWORK	7
4. IMPACT ASSESSMENT AND RATING	11
5. FUNDAMENTAL MONITORING OF KEY INDICATORS.....	14
6. KEY RISKS IN SUPERVISED FINANCIAL INSTITUTIONS	16
7. BUSINESS MODEL ANALYSIS (BMA)	18
7.1 Key Consideration	18
7.2 Assessment of Business Model	19
7.3 Scoring of the viability of business model and sustainability of the strategy ...	21
7.4 Strategic Risk Management Framework.....	23
8. ASSESSMENT OF INDIVIDUAL RISKS	25
8.1 Credit Risk.....	26
8.2 Market Risk.....	37
8.3 Operational Risk	43
8.4 Liquidity and Funding Risk	53
8.5 Interest Rate Risk in the Banking Book.....	63
8.6 Capital Risk	70
8.7 Macro prudential Considerations	77
9. INTERNAL GOVERNANCE AND CONTROLS	81
9.1 General Considerations	81
9.2 Scoring of internal governance and controls	85
9.3 Basic elements of risk management framework.....	86

10. OVERALL SCORE AND SUPERVISORY ENGAGEMENT MODEL.....	89
10.1 General Considerations.....	89
10.2 Aggregation of Risk.....	89
10.3 Risk Matrix.....	90
11. ORGANISATIONAL ARRANGEMENT AND SUPERVISORY ENGAGEMENT MODEL.....	91
11.1 Organisational Arrangement	91
11.2 Supervisory Techniques	91
11.3 Supervisory Engagement Model	93
12. CONSOLIDATED SUPERVISION.....	95
13. APPENDICES	97
Appendix 1: Best Practice Guidance and Benchmarks	97
Appendix 2: Optional Indicators of Impact (Systemic Importance).....	99
Appendix 3: Example of Monitoring Indicators	101
Appendix 4: Financial Soundness Indicators	102

ABBREVIATIONS

ALCO	•	Asset and Liability Management Committee
BCBS	•	Basel Committee on Banking Supervision
BCP	•	Basel Core Principles for Effective Supervision
BMA	•	Business Model Analysis
CDD	•	Customer Due Diligence
CEBS	•	Committee of European Banking Supervisors
CRO	•	Chief Risk Officer
CVA	•	Credit Value Adjustment
DSR	•	Debt Service Ratio
EBA	•	European Banking Authority
EC	•	Essential Criteria
EL	•	Expected Loss
EWI	•	Early Warning Indicators
FRA	•	Full Risk Assessment
FSB	•	Financial Stability Board
FSI	•	Financial Soundness Indicators
FTP	•	Fund Transfer Pricing
FX	•	Foreign Exchange
GDP	•	Gross Domestic Product
GL	•	Guidelines
IAF	•	Internal Audit Function
ICAAP	•	Internal Capital Adequacy Assessment Process
IFRS	•	International Financial Reporting Standards
ILAAP	•	Internal Liquidity Adequacy Assessment Process
IT	•	Information Technology
KSF	•	Key Success Factors
LCP	•	Liquidity Contingency Plan
LCR	•	Liquidity Coverage Ratio
LGD	•	Loss Given Default
MH	•	Medium High
MIS	•	Management Information System
ML	•	Medium Low
NSFR	•	Net Stable Funding Ratio
ODR	•	Observed Default Rate
O-SIs	•	Other Systemically Important Institutions
OTC	•	Over the Counter
PD	•	Probability of Default
PVCF	•	Present Value of Cash Flow
RAF	•	Risk Appetite Framework
	•	

RAS	·	Risk Appetite Statement
RBS	·	Risk Based Supervision
ROE	·	Return on Equity
SEM	·	Supervisory Engagement Model
SFI	·	Supervised Financial Institution
SPV	·	Special Purpose Vehicle
SREP	·	Supervisory Review Process
VaR	·	Value at Risk
	·	

FOREWORD

Risk Based Supervision is an important subject in bank supervision and has remained one of the most topical subjects in our region. MEFMI has over the years, been providing capacity building and development on risk based supervision principles to our member countries through regional workshops and in-country missions. Some of these events have involved MEFMI helping the respective countries to develop their risk based supervision policy frameworks as well as implementing the practices in their day to day work.

These initiatives have seen an overwhelming improvement in our member countries' compliance with the Basel Committee's Core Principles for Effective Banking Supervision as noted by Financial Sector Assessment Program (FSAP) reviews carried out by the World Bank. Notwithstanding the aggregate success of our training initiatives in this area, we also note that our countries remain in different stages of development and implementation in risk based supervision principles with a few countries having fully implemented and even gone further to incorporate new supervisory developments; while others remain at entry level and the remainder only implementing partial provisions of the practice.

While we continue to offer training in these identified areas, we are also cognisant of the fact that central banks continue to lose trained staff to greener pastures. As a result, you often find that new staff is left to grapple without proper guidance. In most cases, when this happens; the supervisory practices implemented are abandoned and people revert to old ways of doing things which may be ineffective. Another common challenge we find is that central banks need to be more confident to incorporate the new supervisory practices introduced after the global financial crisis into their already existing operations. Sections & departments within Central Banks need to work together for effective coordination so that broad goals and objectives are achieved more consistently. By developing and issuing this Guideline, we hope to address some of these deficiencies.

It is against this background that MEFMI found it appropriate to develop a Guideline on Risk Based Supervision that can be used by member countries for their day to day supervisory work. This Guideline documents the Risk Based Supervision examination process for banks and unlike the ones that have been developed in our member countries during technical assistance programmes has the added advantage of incorporating emerging issues in bank supervision such as Basel II/III, stress testing, macro-prudential surveillance and the Revised Core Principles of Effective Bank Supervision as well as latest successful approaches in risk based supervision used by other regulators in the world. The additional content helps to make the Guideline current and we hope that this document can be adopted by member countries for use in supervisory work or as a guiding tool to develop or enhance risk based supervision guidelines in our member states.

The development of this Guideline has benefitted from the guidance and input of officials of the MEFMI Secretariat namely Mr. Patrick Mutimba and Mrs. Siphon Makamba, our consultants Mr. Apollo Obbo and Mr. Leonard Chumo and Heads of Bank Supervision in our member states and their representatives who worked together as a team to ensure that the process receives the necessary support and publicity in member countries from the start to the end. It is my hope that bank supervisors in the region, researchers, policy makers and readers in general will find this Guideline useful.

Caleb M. Fundanga, Ph D

Executive Director, MEFMI

May, 2016.

PREAMBLE BY THE DIRECTOR OF FINANCIAL SECTOR MANAGEMENT

We are pleased to introduce the Risk Based Supervision Guideline for Banks. This is the first generic Guideline on Risk Based Supervision that we have developed having worked with countries in developing their own risk based supervision guidelines and policy frameworks as part of technical assistance. Risk Based Supervision will continue to be implemented in the region and this Guideline will help support RBS implementation initiatives.

I would like to thank the following for drafting this important Guidebook: Mr. Apollo Obbo and Mr Leonard Chumo and bank supervision heads who attended the seminar for reviewing the draft and providing constructive comments. I would also like to thank my colleagues at the MEFMI Secretariat staff for supporting the process and providing all the logistical support.

Patrick Mutimba, CFA
Director, Financial Sector Management
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I. EXECUTIVE SUMMARY

1. The primary objective of banking supervision is spelt out in the first Core Principle of the revised Basel Committee on Banking Supervision (BCBS) Core Principles for Effective Banking Supervision (“Core Principles”). Specifically, Essential Criteria 2 (EC 2) under Principle 1 states that the primary objective of banking supervision is to “promote the safety and soundness of banks and the banking system”. The primary objective of banking supervision is therefore not to prevent bank failures but rather to reduce the probability and impact of any bank failure, particularly on the domestic real economy.
2. The Basel Core Principles acknowledges the need for a Risk-Based Supervision (RBS) approach in which more time and resources are devoted to larger, more complex or riskier banks. The Core Principles also give particular consideration to macro prudential issues and systemic risks. Specifically, in the application of a RBS approach or framework, supervisors are expected to assess risk in a broader context than that of the balance sheet of individual banks. This includes consideration of: the prevailing macroeconomic environment, business trends, and the build-up and concentration of risk across the banking sector.
3. The Essential Criteria 8 of Core Principle 2 requires that “in determining supervisory programmes and allocating resources, supervisors take into account the risk profile and systemic importance of individual banks and banking groups and the different mitigation approaches available”. This requirement has specifically informed this proposed RBS guidelines which entails two broad processes. That is, impact assessment, and assessment of the risk profile and the internal control environment.
4. The proposed framework contained in these guidelines, in particular, consists of two broad processes. That is, (i) impact assessment aimed at assessing the systemic importance of the regulated banks to the domestic economy, and (ii) the risk assessment process which involves the assessment of the probability of a specific risk crystallising within the supervised bank, and the quality of internal governance and controls in place aimed at mitigating the specific risk.
5. The general expectation is that under the RBS framework, the impact rating and risk score will inform: the frequency, depth and form of supervisory engagement with the supervised bank. In particular, the expectation is that under the RBS approach, more resources will be allocated to higher impact entities and the intensity of scrutiny of such entities will also be higher to reflect the fact that their failure would potentially result in higher impact on the domestic real economy.

6. In drafting these guidelines, reference has been made to the Risk-Based Supervision (RBS) practices in a number of jurisdictions including: the United Kingdom (UK), Canada and Australia. Reference has also been made to general and emerging international best practice recommendations as set out in, amongst others, the **European Banking Authority (EBA) Guidelines on common procedures and methodologies for the supervisory review and evaluation process (SREP) issued on 14 December 2014** and came into effect from 01 January 2016.
7. These proposed RBS guidelines are meant to be broad and hence further customisation may be required to ensure that jurisdiction specific considerations are fully taken into account. In the implementation process-further customisation should particularly be aimed at ensuring that the supervisory body meets its primary objective as set out in the Basel Core Principles for Effective Banking Supervision and the prevailing local legislations. Some of the areas that could be further refined to take into account jurisdictions specific preferences and nuances includes: (i) the in-scope risk types including granularity of the risk assessment, e.g. whether assessment is to be carried out at broad risk type level or sub-type level, (ii) the number of impact and risk categories which could be increased or decreased as necessary to reflect intended level of differentiation of the intensity of supervisory scrutiny and inherent risk.
8. The proposed main risk types to be considered as part of the risk assessment under the proposed RBS framework include: (i) credit, (ii) market, (iii) operational, (iv) liquidity and funding, (v) interest rate risk in the banking book (IRRBB), (vi) capital risk, and (vii) macro prudential consideration (risk). Strategic and business risks are also considered as part of the Business Model Analysis (BMA). The proposed risk types have been informed by the requirements of the Basel Capital Framework which amongst others require consideration of credit, market and operational risk under Pillar 1 and Strategic and IRRBB (amongst others) under Pillar 2. The consideration of liquidity and funding risk, on the other hand, is driven by the recent increase in the regulatory focus on liquidity risk including the plan to introduce standard regulatory liquidity metrics, i.e. Liquidity Coverage Ratio (LCR) and Net Stable Funding Ratio (NSFR).
9. The proposal is that regulatory and compliance risk should either be assessed as part of the fundamental monitoring or be included in the assessment of individual risks type. The decision on how the regulatory and compliance risks should be considered under the proposed RBS should be informed by the supervisory authorities' view on what regulatory and compliance risk entails and should entail. Reputational risk, on the other hand, should be assessed as part of the assessment of either operational risk or liquidity risk. The supervised institutions should in particular be able to demonstrate to their supervisory authorities that they have appropriately considered the potential impact of crystallisation of reputational risk and that it has put in place

adequate mechanism aimed at monitoring and managing any reputation risk. This may include appropriate social media management strategy.

10. The expectation under this proposed RBS guidelines is that a Business Model Analysis (BMA) and an assessment of quality of internal governance and control environment will be carried out by the banking regulator, taking into account the: (i) adopted Supervisory Engagement Model (SEM), (ii) the supervised bank's risk rating, and (iii) the significance of the relevant bank as reflected by the assigned impact rating. The BMA is, in particular, aimed at assessing the level of business and strategic risk inherent in a bank. The outcome of the BMA should, where applicable, inform the assignment of the impact ratings to individual banks.
11. To facilitate the implementation of RBS framework, the supervisory authorities should, where necessary, also develop and disseminate appropriate risk management guidelines, setting out the supervisory expectation in relation to the risk management framework within the supervised banks. The risk management guidelines that have already been implemented should form part of the criteria for the assessment of the quality of a supervised bank's internal governance and control environment. Where the supervisory authorities have not developed risk management guidelines for the supervised banks, then Basel principles on management of the various risks may be used as industry best practice. Reference may also be made to principles and guidelines that have been issued by other authorities such as the Financial Stability Board and the European Banking Authority (EBA).
12. The Full Risk Assessment of a supervised bank should, where applicable, be aligned with the Supervisory Review and Evaluation Process (SREP) as required under Pillar 2 framework of the Basel Capital Framework. The outcome of the supervised bank's Internal Capital Adequacy Assessment Process (ICAAP) and the Internal Liquidity Adequacy Assessment Process (ILAAP) should therefore, where available, form part of the input into the assessment of the inherent risk and the quality of the internal control environment under the RBS framework.
13. The RBS framework should where practicable be aligned with the Basel II framework by ensuring that the material risks considered under the Pillar 1 and Pillar 2 of the Basel framework are consistent with the key individual risks to be assessed under RBS. A process should therefore be put in place with the aim of ensuring that the RBS framework is overtime harmonized with the expectation of the Basel 2 and Basel 3 frameworks particularly in relation to the assessment of the minimum capital and liquidity requirements.
14. The RBS framework should also be supported by an appropriate technology infrastructure that, amongst others, has the capability to: (i) generate key industry benchmarks and metrics to feed into the periodical fundamental monitoring of

key indicators including compliance with regulatory set capital, liquidity and other thresholds, (ii) facilitate assignment of risk scores, capture of the supervisory rationale for the assigned risk scores, and monitoring of the evolution of the risk score over time (iii) capture proposed remedial actions arising as a result of the risk assessment processes and the supervised bank's response and submissions aimed at addressing the supervisory prescribe remedial action, and (iv) facilitate ongoing tracking of remedial actions including issuing of alerts for any overdue actions from the supervised banks.

15. The adopted technology infrastructure should also be adequately flexible to facilitate future changes in supervisory processes. It should also have the appropriate reporting capability with the ability to generate reports for senior management within the supervisory body including information to feed into challenge process around the assigned impact and risk ratings.
16. In jurisdictions where the Basel Framework has not been implemented and thus banks are not explicitly required to have an ICAAP and ILAAP in place, the supervisory authorities should implement alternative processes aimed at collecting the relevant information to facilitate the assessment of individual risks and the quality of internal controls and governance within the supervised banks. The alternative data collection processes could include the use of: qualitative and quantitative data templates, risk assessment questionnaires, reports from independent third parties, on-site inspection exercise reports and findings, targeted interviews of the bank's risk control and internal audit personnel, process walkthroughs etc.
17. The expectation on the frequency of stress testing exercise to be carried out by the supervised banks should be informed by the risk type, availability of the relevant information and the materiality of the risk type. In particular, the expectation should be that stress testing of material risk should be at a higher frequency compared to less material risk, and stress testing of liquidity and market risk should be at a higher frequency compared to credit risk. At a minimum, the supervised banks should be able to carry out frequent and ad-hoc stress testing of liquidity risk. Stress testing of credit risk should however be on a less frequent basis but at a minimum on a bi-annual basis.
18. The output of the RBS together with the SREP, where applicable, should ideally be used by the supervisory authorities to inform the decision on the level of Pillar 2 capital to be allocated to the key material risk types including the challenge of the adequacy of the bank's own estimate of Pillar 2 capital requirements.
19. The use of supervisory judgement which is a key input into RBS requires highly experienced bank examiners and adequate peer group challenge of qualitatively

driven supervisory risk and impact ratings. The supervisory authorities should therefore put in place measures aimed at ensuring that the supervisory staff are adequately skilled and experienced. There should also be mechanism in place aimed at ensuring that the exercise of supervisory judgment is: (a) well supported with reasonable rationale, and (b) challenged at both the operational and senior management level.

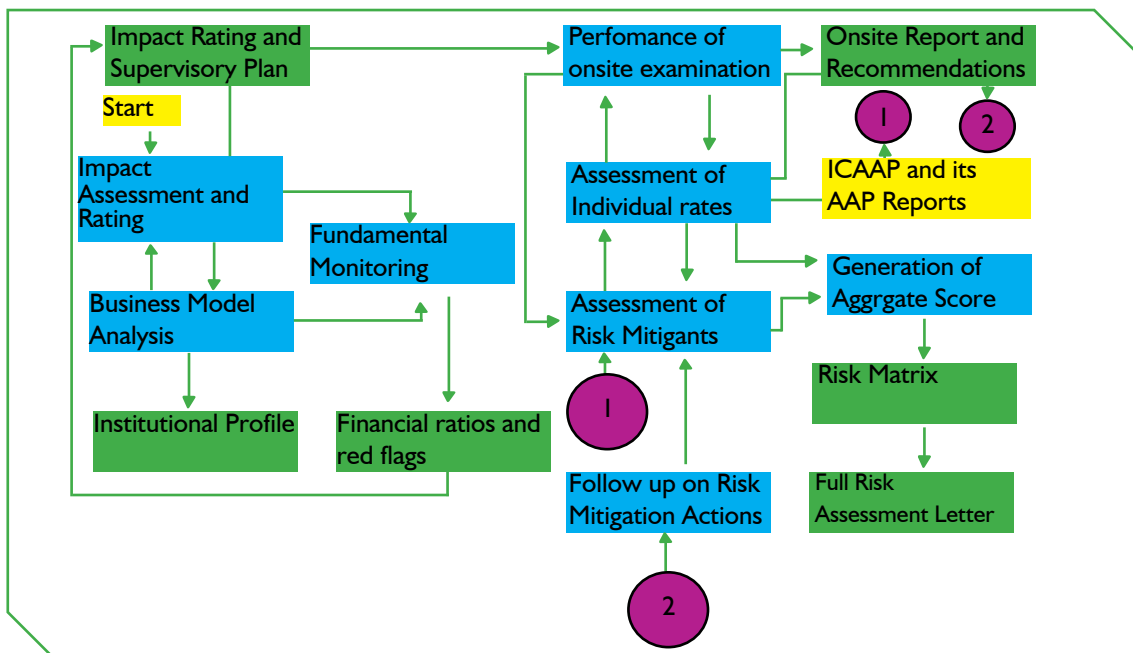
2. RATIONALE FOR RISK BASED SUPERVISION

20. The following are some of the expected benefits and rationale for Risk Based Supervision (RBS):
- Enhanced ability to identify, measure, monitor, and control risks on an ongoing basis as well as the ability to prescribe the appropriate remedial action to address any identified deficiencies or risks in a timely manner. This generally results in a proactive rather than a reactive approach to supervision of banks.
 - Cost effective use of supervisory resources through a higher focus on material risks and closer emphasis on systemically significant banking institutions whose failure would likely result in higher impact on the domestic economy.
 - Frequent, open communication with the supervised banks and application of uniform supervisory framework and terminology to foster common understanding of risk characteristics between the regulator and supervised banks.
 - Enhanced surveillance effort, in which the monitoring of new developments and strategic changes at a given bank are conducted throughout the supervisory engagement cycle, which takes into account the systemic significance and risk profile of the bank.
 - Greater emphasis on assessment of key operational areas of the banks, which exhibit highest risks or adverse trends.
 - Improved quality of supervisory output, necessary to support analysis, judgment and conclusions by the supervisory authority in relation to the financial position of the regulated bank on a point-in-time and forward looking basis.
 - Better evaluation of risks through separate assessment of inherent risks and the quality of the overall risk management framework including the quality of governance and firm-wide internal control mechanisms
 - Greater emphasis on early identification of emerging risks and system-wide issue and hence supporting macro prudential surveillance efforts of the supervisory authorities.
21. Implementation of RBS framework will also result in alignment between the adopted supervisory practices and the expectation of the revised Basel Core Principles for Effective Banking Supervision (September, 2012). In particular, the revised Core Principles recommends greater focus on risk-based supervision, and the need for early intervention and supervisory actions.

3. PROPOSED RISK-BASED SUPERVISION FRAME WORK

22. In line with expectation of the Basel Core Principles, the adopted RBS framework should be built around: (a) Business Model Analysis (BMA), (b) assessment and rating of the quality of internal governance and control environment, and (c) assessment and rating of the level of inherent risks. Specifically, the end-to-end assessment under the proposed RBS should include the step as per the figure below.
23. The RBS exercise should be cyclical and each stage should result in supervisory outputs which include: impact and risk score, institutional profile, risk mitigation action, supervisory measure in form of capital add-on or liquidity buffers, full risk assessment report, results of the supervisory stress testing exercise, etc.
24. The institutional profile should be generated taking into account the outcome of BMA and, where applicable the CAMELS rating score.

Figure 1: Proposed MEFMI Risk Based Supervision Framework



25. The proposed framework fully recognises the principle of proportionality in the risk assessment process (assessment of the individual risks) and the overall supervisory engagement with the regulated banking institutions. This is achieved through categorisation of the regulated banks into four impact categories based on their systemic importance to the domestic economy. The expectation being that the

scope and frequency of the risk assessment process will be driven by the impact rating of the individual bank, reflecting its systemic importance.

Box 1: Principle of Proportionality

Source: *Proportionality in Bank Regulation: A Report by the EBA Banking Stakeholder Group*

A. Legal Definition of Proportionality

At its most abstract level, the Principle of Proportionality requires that an action undertaken must be proportionate to its objective. According to settled case law, the Principle of Proportionality requires that community measures: (a) do not exceed the limits of what is appropriate and necessary in order to attain the objectives legitimately pursued by the legislation in question; (b) when there is a choice between several appropriate measures, recourse must be had to the least onerous; and (c) the disadvantages caused must not be disproportionate to the aims pursued.

Proportionality is a flexible principle which is used in different contexts to protect different interests and entails varying degrees of judicial scrutiny. It is by its nature flexible and open-textured.

B. Economic Concept of Proportionality

The economic perspective on proportionality considers issues such as whether the proposed regulation is addressing a real problem with clearly-defined costs, whether it is the most efficient way of addressing it, and the broad costs and benefits to the wider economy

C. Five Pillars of Proportionality

The Principle of Proportionality has several dimensions each of which raise different issues with respect to costs and benefits for all stakeholders (including banks and consumers of banking services). The five pillars are:

- a) **Objectives:** whether a particular regulation that is designed to apply to all regulated institutions is disproportionate in relation to the objective sought.
- b) **The totality of regulation:** whether the totality of regulation is disproportionate for the key regulatory objectives, given the possibility of diminishing marginal returns that may emerge if regulation is taken beyond its optimal level in terms of scope and intensity.
- c) **Excess Complexity:** whether regulation is excessively and unnecessarily complex for the objectives that are sought and whether the same regulatory objectives could be achieved, and with the same degree of effectiveness, with less complex regulatory requirements.
- d) **Differentiations:** whether, in the application of a regulation, sufficient differentiations are made between different types of banks without compromising the objectives of regulation. Such differentiations might relate to, for instance, size, business models, ownership structures, etc.
- e) **Materiality:** whether a particular regulation either applies to institutions to which it should not be applied (the materiality principle) and/or to institutions which are subject to a costly new regulation when they are only marginally exposed to the risks that such regulation aims to control.

26. The categorisation of regulated banks into the relevant impact categories should, where deemed relevant, take into account: size, organisation structure, substitutability of services or products offered, complexity of its business model, and level of inter-connectedness of the supervised bank with other financial sector entities within the system or with the overall financial system.
27. The aim of fundamental monitoring (monitoring key indicators) is to identify any significant changes in the financial position and risk profile of a regulated bank. The expectation is that the outcome of the monitoring process should inform the decision on whether to carry out in-depth risk assessment of the identified 'red flag' banks or the decision to put in place appropriate supervisory measure(s) with the aim of averting any risk of failure or breach of capital or liquidity related regulatory thresholds by specific banks. The fundamental monitoring should also be used to identify breaches of regulatory set thresholds, e.g. solvency ratio, liquidity ratios, loan-to-deposit ratio, etc.
28. The focus of the Business Model Analysis (BMA) should be to assess the viability and sustainability of a bank's current business model and strategy. The analysis should, amongst others, be aimed at identification of specific vulnerabilities facing the relevant bank, and the potential impact of the identified vulnerabilities on the ability of the specific bank to generate value to the stakeholders, and to continue operating as a going concern. The particular focus of BMA is the assessment of the inherent business and strategic risks.

Box 2: Business Model Analysis

The European Central Bank (ECB) Single Supervisory Mechanism (SSM) identified business model and profitability risk as part of its supervisory priorities for 2016. Specifically, it noted that:

“The key risk that stands out relates to banks' business models and profitability. Both are being challenged by the high level of asset impairments and the protracted period of low interest rates. In 2016, building on previous work around banks' business models and on profitability analyses, the SSM is launching a thematic review of banks' profitability drivers at firm level and across business models. The analysis of profitability drivers will facilitate the identification of banks with structurally low profitability. In this context, an area of supervisory focus will be examining whether profitability is achieved through, among other things, a weakening of credit standards, greater reliance on short-term funding, or an increase in risk exposures not commensurate with the bank's stated risk appetite”

29. The focus of the assessment of internal governance and bank-wide controls should be to gain assurance on the overall effectiveness of the implemented internal governance guidelines. This includes the assessment of the efficiency of the Internal

Audit Function (IAF), and the quality of internal control mechanisms in place. The assessment of the quality of the internal governance should involve a review of the regulated bank's level of compliance with the best practice in relations to internal governance and risk controls practices particularly those set out under the BCBS Principles for Enhancing Corporate Governance (October, 2010) and the EBA Guidelines on Internal Governance (GL 44, September 2011). Reference should also be made to the requirements of the various BCBS Principles, e.g., those on management of credit risk, liquidity risk, interest rate risk, operational risk etc. Please see Appendix I for some of the best practice guidance and benchmarks.

30. The assessment of individual risks should result in the assignment of a score to the specific material risks the supervised bank is currently exposed to or might be exposed to in future based on, where deemed appropriate, a four point scale [Low, Medium Low, Medium High or High]. The assessment should, amongst others, take into consideration risks that, though may be immaterial, could crystallise under severe but plausible stress scenarios. The risk assessment exercise should, in particular, involve the identification and rating of the level of actual risk the bank is exposed to, and the quality of risk management and controls in place to mitigate against the impact of crystallisation of the specific risk types facing the bank.
31. The proposed RBS framework should take into account the expectations of the Basel Core Principles including principle 8 on the Supervisory Approach together with the related EC as per the table below.

Box 3: Basel Core Principle 8 – Supervisory Approach

An effective system of banking supervision requires the supervisor to develop and maintain a forward-looking assessment of the risk profile of individual banks and banking groups, proportionate to their systemic importance; identify, assess and address risks emanating from banks and the banking system as a whole.

EC 1: The supervisor uses a methodology for determining and assessing on an ongoing basis the nature, impact and scope of the risks which banks or banking groups are exposed to, including risks posed by entities in the wider group.

EC 2: The supervisor has processes to understand the risk profile of banks and banking groups and employs a well-defined methodology to establish a forward-looking view of the profile.

EC 4: The supervisor takes the macroeconomic environment into account in its risk assessment of banks and banking groups.

4. IMPACT ASSESSMENT AND RATING

32. In formulating the impact assessment methodology proposed in these guidelines, reference was made to the EBA Guidelines in relation to the assessment of other systemically important institutions (O-SIIs) issued on 16 December 2014. The criteria and indicators used in the EBA framework, and proposed in these guidelines, are in line with the international view on sources of systemic risk, such as the BCBS domestic systemically important banks (D-SIB) framework. The proposed framework of indicators should generally result in a ranking of banks in terms of their systemic importance to the domestic economy.
33. In addition to the proposed quantitative framework for impact assessment and rating, supervisory judgement should be used where appropriate in the categorisation of banks into different impact rating buckets. The supervisory judgement should, amongst others, take into account: (a) the unique features of individual country's banking system, (b) the outcome of the BMA, and (c) other considerations not captured in the quantitative framework. The use of supervisory judgement to complement the quantitative framework is particularly important to ensure that all factors and considerations are taken into account when determining the systemic importance of the individual banks.
34. Banks should be assessed for systemic importance at the appropriate level, i.e. individual, sub-consolidated or consolidated basis. Specifically, home regulators should assess banks at the consolidated level while host regulators should assess the systemic importance of subsidiaries in their countries in reference to their real domestic economy.
35. The reference system for assessing the impact of failure of banks should be each country's domestic economy and the assessment should, at a minimum, be conducted on a yearly basis. The supervised bank's impact rating of individual banks should also be reviewed in the event of a significant event having an impact on its systemic importance, e.g., merger or acquisition, deleveraging, sale of a significant portfolio or sub-portfolio, listing in a stock market, nationalisation etc.
36. The proposed impact assessment criteria should, as per best practice, take into account: (a) size, (b) importance of the bank to the domestic economy, i.e. substitutability and financial infrastructure consideration, (c) complexity, and (d) interconnectedness of the bank with the financial system. The impact rating based on quantitative analysis should be subject to qualitative challenge particularly to ensure that the outcome is reasonable and representative of expectation based on expert knowledge of the supervised banks.

37. The specific indicators of systemic importance of individual supervised banks should be selected taking into account the need to ensure that the outcome of the impact assessment is reflective of the local consensus supervisory expectation. The indicators in the table below therefore need not be considered in their entirety.
38. The number of impact and risk categories (buckets) should be decided by each jurisdiction taking into account country specific factors including but not limited to: (a) the structure of its financial system, (b) supervisory risk appetite, and (c) expected level of differentiation of the Supervisory Engagement Model and risk score, etc.
39. The criteria for mapping of the impact score based on the criteria above to the impact grades [e.g., High, Medium-High, Medium-Low, or Low] should be defined/calibrated by the individual regulatory authorities with the aim of ensuring: (a) appropriate distribution of banks across the different proposed impact grades, (b) reasonableness of the outcome of the assessment based on the supervisory understanding of the domestic banking landscape, and (c) alignment of the outcome of the impact assessment with the adopted or proposed Supervisory Engagement Model.
40. The impact and risk score should be mapped into specific numbers to facilitate ease of analysis and aggregation. Example would be to assign the numbers as follows: low = 1, medium = 2, high = 3 and extremely high = 4. This is to facilitate aggregation and ease of trend and peer group comparisons.
41. All the four broad criteria parameters I should, ideally, be weighted equally at 25%. The indicators within each criterion should also be weighed equally relative to the other indicators within the respective criterion. The proposed main indicators for scoring and their respective weights are set out in the table below. The optional indicators are also set out in the Appendix 2. The specific indicators should be at the discretion of each regulatory authority but should broadly take into account the expectation of best practice and particularly those set by the BCBS and the Financial Stability Board (FSB).

¹The four broad criterion are: (a) size, (b) importance including substitutability, (c) complexity, and (d) inter-connectedness

Table 1: Key Indicators of Impact

Criterion	Indicator	Weight
Size	Total assets	25.00%
Importance including substitutability	Value of domestic payment transactions	8.33%
	Deposits from the private sector	8.33%
	Loans to the private sector	8.33%
Complexity	Notional value of OTC (bilateral) derivatives	8.33%
	Cross border liabilities	8.33%
	Cross border claims	8.33%
Inter-connectedness	Intra-financial system liabilities	8.33%
	Intra-financial system assets	8.33%
	Outstanding debt securities	8.33%

42. Effective impact assessment may require co-operation between the banking supervisor, the national payment system and the regulators of non-banking financial institutions. This may consequently require that such co-operation be enshrined into the local supervisory framework, legislation or regulation.

5. FUNDAMENTAL MONITORING OF KEY INDICATORS

43. The general expectation is that the bank regulator/supervisor will carry out regular monitoring of key financial and non-financial indicators to identify changes in the financial conditions and risk profiles of the regulated banks, and the possible need to update the assessment of some of the key elements of overall risk assessment to take into account information received outside of the planned supervisory programme.
44. The regulatory authority should ideally monitor key financial and non-financial indicators for all the supervised banks on at least a quarterly basis. This should be based on the periodical supervisory reporting, and independent market data and analyses. The periodic supervisory reports should include those aimed at capturing the following: (a) solvency position taking into account the adopted capital framework, e.g., the Basel Capital Framework, (b) liquidity position taking into account maturity mismatches between assets and liabilities, and the expected survival horizon under adverse scenario, (c) the balances sheet, and profit and loss statement, (d) credit portfolio information including distribution of exposures by industry, performance status, geographical region etc, and (d) FX mismatch analysis.
45. The CAMELS score, where applicable, should also form part of the fundamental monitoring exercise. In particular, the institutions with unfavourable CAMELS score should be considered for closer supervisory scrutiny irrespective of its impact rating. This gives the general expectation that under RBS lower impact but highly risky or vulnerable institutions should also be subject to more frequency and enhanced supervisory review to reflect their higher risk of failure.
46. The monitoring of key indicators should be based on a formal system for identification of material changes and shifts in key indicators. The assessment should be based on pre-set thresholds, where relevant, and there should be formal escalation procedure for any identified 'red flags' or exceptions. There should also be a process aimed at ensuring that all the identified significant shifts are appropriately investigated and monitored.
47. The set of indicators and thresholds should be tailored to the specific features of the individual banks or group of similar banks (peers), and should reflect the banks' size, complexity, business model, and risk profile. The indicators should include financial and risk indicators addressing all the categories of risks covered in these guidelines. Please see Appendix 3 for example of monitoring indicators that can be used to assess the financial position of a bank. Consideration may also be given to the set Financial Soundness Indicators (FSI) and particularly the core set and those encouraged for the deposit takers. Please see Appendix 4 for the indicators.

48. The relevant benchmarks and quantitative thresholds to help in informing and challenging the bank risk score as set by each jurisdiction taking into account: (a) the structure of its financial system, (b) appetite for failure of some of the financial institutions, (c) idiosyncratic behaviour of the participants in its financial system, and (d) the observed historical averages and specific ranges of figures and ratios reported by institutions in their jurisdictions.

49. The bank specific indicators should be supplemented with the relevant macro-economic indicators in the countries, sectors and markets where the bank operates. The macro-economic factors should include the broad factors likely to drive the performance of specific banks, group of similar banks or the overall banking system. They could include: (a) growth or decline in specific sectors or the overall GDP, (b) movement in collateral prices such as real estate price, (c) changes in the level of employment and interest rates, etc.

6. KEY RISKS IN SUPERVISED FINANCIAL INSTITUTIONS

50. The following are the most common risks inherent in supervised banks and which should, where applicable, be considered as part of the assessment of the inherent risk under the RBS framework:
- a. **Credit Risk:** This arises from the potential that a borrower or counterparty could fail to meet its obligations in accordance with agreed terms. For most banks, loans are the largest and most obvious source of credit risk. However, other sources of credit risk exist throughout the activities of a bank, including in the banking book, the trading book, and both on and off the balance sheet exposures.
 - b. **Operational Risk:** This is the risk of direct or indirect loss resulting from inadequate or failed internal processes, people, and systems or from the external events or unforeseen catastrophes. It includes the exposure to loss resulting from the failure of manual or automated systems to process, produce, or analyse transactions in an accurate, timely, and secure manner.
 - c. **Market Risk:** This is the risk to a bank's condition result from adverse movements in market rates or prices, such as interest rates, foreign exchange rates or equity prices. While generally market risk covers all on and off-balance sheet positions (trading and banking book) subject to losses arising from movements in market prices, in this guidelines interest rate risk in the banking book is excluded in the assessment of market risk and considered as a separate risk type.
 - d. **Strategic and Business Risk:** Strategic risk is the risk of current and prospective impact on supervised bank's earnings and capital arising from poor business decisions, improper implementation of decisions or lack of proper response to industry, economic or technological changes. This risk is a function of the compatibility of bank's strategic goals, the business strategies developed to meet these goals and the quality of implementation. Business risk, on the other hand, is the risk underlying the business of the supervised bank that is not explicitly covered under other risk categories (residual risk). It is the potential loss of value due to fluctuations in volumes, margins, and costs stemming from: decreased demands, competitive pressure and operational inefficiency.
 - e. **Liquidity Risk:** This is the risk resulting from a supervised bank's failure to meet its cash flow obligations as they fall due because of its inability to convert assets into cash, or its failure to access adequate fund, or, if it can, that the fund comes with an exceptionally high cost that may adversely affect its current and future incomes and capital position.

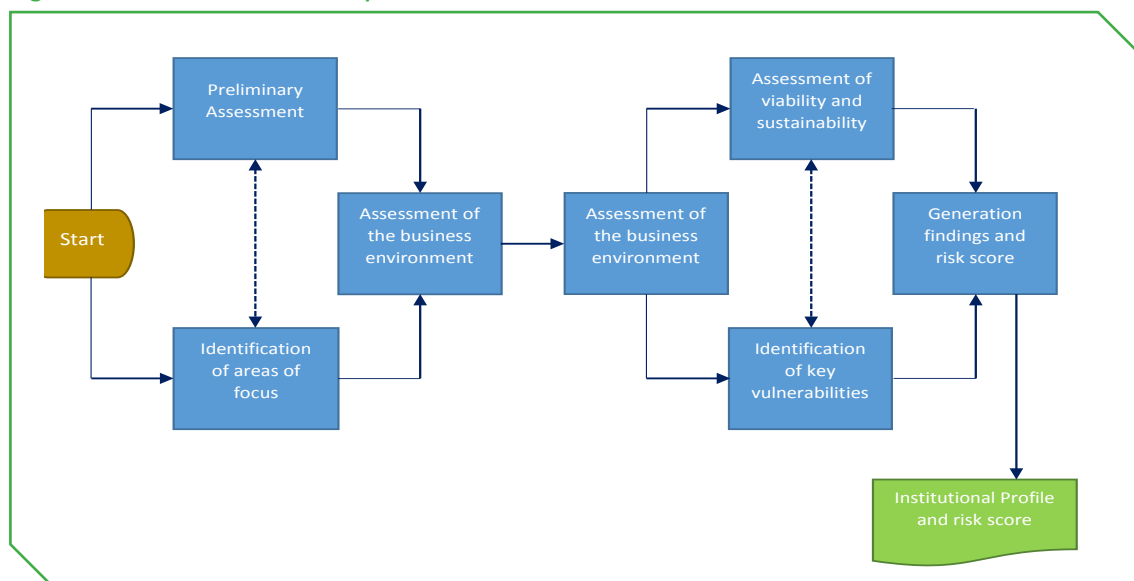
- f. **Compliance Risk:** This is defined as the risk of legal or regulatory sanctions, material financial loss, or loss to reputation a bank may suffer as a result of its failure to comply with laws, regulations, prudential guidelines, supervisory recommendations and directives, rules, internal policies and procedural guidelines and codes of conduct applicable to its banking activities. The consideration in the assessment of compliance risk should include a review of systems and processes in place to monitor compliance including those related to Anti-Money Laundering.

7. BUSINESS MODEL ANALYSIS (BMA)

7.1 Key Consideration

51. The aim of the Business Model Analysis (BMA) should be to assess business and strategic risk with the specific objective of determining the viability of the bank's current business model and the sustainability of its long-term strategy.
52. BMA should be based on the following information sources: (a) the bank's board approved strategic plan, (b) audited annual financial statements, (c) periodical regulatory returns, (d) internal management information packs, (e) recovery and resolution plans, (f) third-party reports from the auditors, equity analysts, credit analyst etc, and (g) any relevant industry surveys and publications.
53. BMA should be used as a basis for the identification of the individual bank's key vulnerabilities and particularly those that could have a material adverse impact on the bank or those that could lead to failure. BMA should ideally involve the steps below. The process however may be modified to take into account the unique nature of entity bank being assessed and/or prior supervisory knowledge and experience.

Figure2: Business Model Analysis



Box 4: Do Business Models Matter?

A study by the European Central Bank noted that:

“The importance of business models, and divergence in the realization of risk across institutions during the crisis, would imply that a better supervisory understanding of bank incentives in real time (i.e. before they materialize) is warranted. In particular, our results call for supervisors to enhance their knowledge of the impact of different business models on bank risk”

Source: Yener Altunbas, Simone Manganelli and David Marques-Ibanez, *Bank Risk During the Financial Crisis Do Business Models Matter?*, European Central Bank, Working Paper Series, No. 1394 / November 2011

7.2 Assessment of Business Model

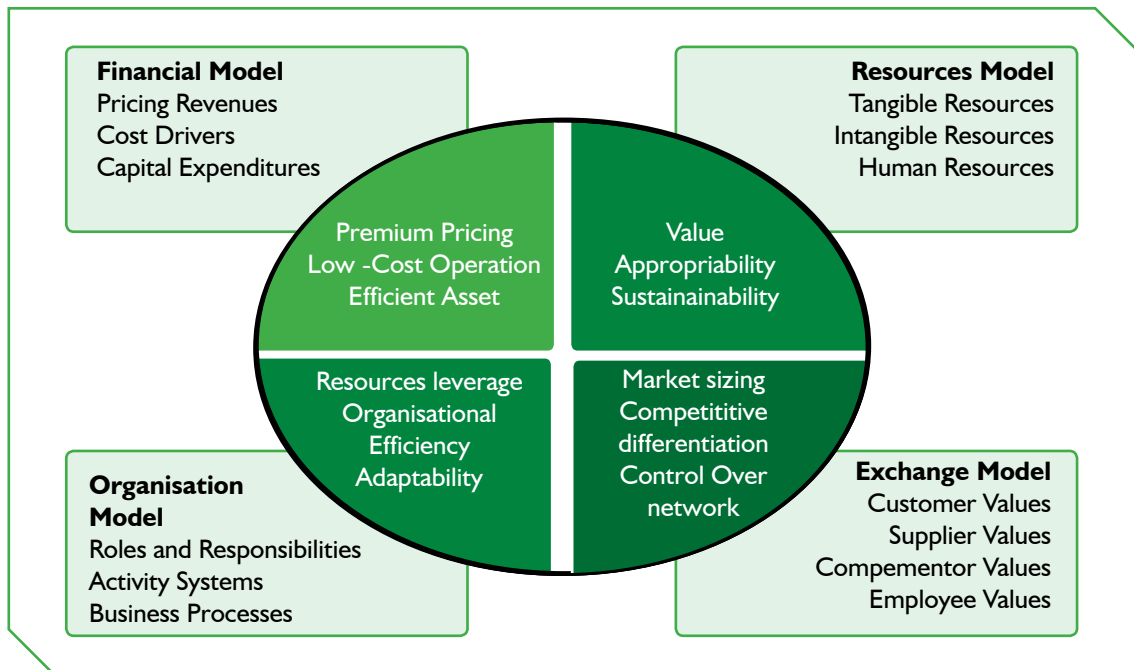
- 54. Preliminary Assessment:** This should involve the analysis of a bank’s main business lines, geographical spread, and market position. The main objective of the preliminary analysis should be to identify a supervised bank’s: (a) geographical footprint, (b) key subsidiaries and branches, (c) main business lines, and (d) key products. The preliminary assessment should also be used to: (a) determine the materiality of the bank’s individual business lines in terms of contribution to profit and risk profile, (b) identify the appropriate peer group for the bank, and (c) inform the application of the principle of proportionality in the overall risk assessment and supervisory engagement together with the assigned impact rating.
- 55. The identification of the areas of focus phase:** BMA should capture the material business lines and should take into account the impact of the identified material business lines on the viability and sustainability of the bank’s business model, and their susceptibility to external shocks. Specifically, the following considerations should be taken into account when determining the areas of focus in the BMA: (a) materiality of each individual business line, (b) previous supervisory findings in relation to the business model and overall strategy, (c) internal and external audit findings regarding sustainability and viability of bank’s specific business lines, (d) any recent significant changes in the bank’s business model and strategy, and (e) performance of the bank in comparison to its peers.
- 56. Assessment of the business environment:** The assessment of the business environment should take into consideration the existing and potential future business conditions in which the relevant bank operates in or is likely to operate in based on its business model and business mix. The assessment of the business environment should, in particular, include analysis of the potential direction of macro-economic and financial market trends, and the business strategies of the peer banks. The assessment of the business environment should, amongst others, be used to identify: (a) the competitive landscape in which the bank is operating, (b) the relevant macro-economic variables driving the performance of the bank,

and (c) trends likely to have an impact on the performance of the bank. As part of this assessment, the supervisor could leverage on the outcome of the bank's SWOT (Strengths, Weakness, Opportunities and Threats) and PEST (Political, Economic, Socio-demographic and Technology) analysis.

- 57. Analysis of the bank's business model:** The aim of analysing the business model is to understand how the bank generates profits or economic value for the shareholders. The analysis should be based on a mix of quantitative and qualitative approaches. Quantitative analysis of the business model should involve a review of current (point-in-time) and evolution of: (a) profit and loss including the specific key drivers and components, (b) balance sheet structure and related metrics, (c) concentration of income streams to asset class, geographical, region or industrial sectors, and (d) risk appetite including the overall limit system. Qualitative analysis, on the other hand, should involve the analysis of: (a) external factors that are likely to determine the success of the business model, (b) internal capacity of the bank to execute the business strategy, (c) quality of relationship with key stakeholders and in particular the value of the bank's franchise, and (d) sources of the bank's competitive advantage, i.e., Key Success Factors (KSF).
- 58. Assessment of viability and sustainability of the business model:** This involves analysis of the bank's financial projections and strategic plan with the aim of understanding the key assumptions, reasonableness of those assumptions and the risks to the key business strategy. The analysis, ideally, should include an in-depth review of: (a) the approved strategy, (b) financial projections, (c) Key Success Factors (KSF) for the strategy and the financial plan, (d) planning assumptions and scenarios, and (e) the ability of the bank to execute its plan. The assessment of viability of the business model should, specifically, be based on: (a) comparison between Return on Equity (ROE) and cost of equity, (b) assessment of the appropriateness of the funding mix, and (c) testing of alignment between the business strategy and the risk appetite. The assessment of sustainability of the strategy, on the other hand, should be based on the assessment of: (a) the reasonableness of the key business assumptions and financial projections, (b) the potential impact of changes in business environment on the bank's financial performance, and (c) the degree of alignment between the bank's current business model and its long-term strategy.
- 59. Identification of key vulnerabilities:** The assessment of the key vulnerabilities of the bank's business model should take into account, where relevant: (a) reliance on unrealistic strategy, (b) any concerns around the funding structure, (c) excessive concentrations and volatility of income sources, and (d) the level of risk taking. The identification of key vulnerabilities should result in a supervisory view on the viability of the bank business model and sustainability of its strategy, and also on the quality of measures in place aimed at addressing any emerging problems related to business model or strategy.

60. Reverse stress testing exercise should, where deemed applicable, be used as one of the tools for the assessment of the viability of the bank’s business model and where necessary specific business lines.
61. Below is an example of a general framework for the assessment of an institution’s business model. The framework looks at four main elements, which includes: financial model, resource model, organisational model and exchange model².

Figure 3: Framework for assessment of business model



7.3 Scoring of the viability of business model and sustainability of the strategy

62. As per the key considerations set out above, the viability of business model and sustainability of its strategy should be scored on a four point scale as per the summary criteria set out in the table below. The final rating or score should be subject to a rigorous internal challenge at various levels within the regulatory body. The rationale for the final risk and internal control score should also be documented.

²Source: Yuwei Shi and Tom Manning, Understanding Business Models and Business Model Risks, The Journal of Private Equity, Spring 2009

63. The criteria for rating of business risk should include: (a) historical volatility of earnings and particularly those earnings that are not directly or indirectly attributable to other material risk types, (b) diversity of and inter-dependence between revenue streams, (c) cost structure including the split between fixed and variable costs, (d) quality of business strategy, (e) historical comparison between actual performance and projections, (f) research and development capability.
64. The following are some of the specific risks associated with a business model³:

Figure 4: Specific risk associate with a Business Model

Value of Market	Firm Share	Competitive Sustainability
<ul style="list-style-type: none"> • Decreasing customer value due to changing needs • Lack of adequate resources • Increasing competition 	<ul style="list-style-type: none"> • High operating costs • Weak profit regime • Failure to resource model • Failure of organizational model 	<ul style="list-style-type: none"> • Deteriorating value of firm resources • Less effective resources • Deteriorating resources

7.4 Strategic Risk Management Framework

65. The following table sets out the high level expectation in relation to the bank's strategic risk management framework. The provisions below should ideally, together with the criteria set out above, form the basis for the assessment of the quality of the bank's processes for management of strategic and business risk.

³Understanding Business Models and Business Model Risks, The Journal of Private Equity, Spring 2009

Table 3: Strategic risk management framework

Strategic Risk Management Framework

a. Introduction

Inadequate strategic planning or improper implementation of strategies could expose a bank to significant financial losses. It could also result in reputational risk and loss of the supervised bank's market standing.

The bank's strategic risk management framework should take into account the supervised bank's risk profile and level of sophistication. It should also ensure that the strategic risk is consistently and comprehensively identified, assessed, monitored, controlled and reported. The strategic risk management framework should consist of the following components:

b. Board and Senior Management Oversight

The ultimate responsibility for formulating the strategy and managing strategic risk rests with the Board. Senior management, on the other hand, is responsible for effective implementation of the strategic risk management framework.

To adequately discharge their overall responsibility of strategic risk management, the Board and senior management of a bank are expected to: understand the bank's current and prospective business activities, analyse the banks strengths are weaknesses and the potential impact of changes in the operating environment, and be aware of the potential risk to the approved strategy.

c. Strategic Risk Management Structure

There should be a credible strategic risk management structure with well-assigned roles and responsibilities to facilitate the achievement of strategic goals and objectives while managing the risks involved within an acceptable level or risk appetite/limit.

d. Strategic Risk Management Process

A credible strategic risk management process should include: (i) strategic planning procedures or guidelines, (ii) appropriate change management process, (iii) guidelines or procedures on implementation and monitoring of the business strategy, and (iv) performance evaluation and feedback process.

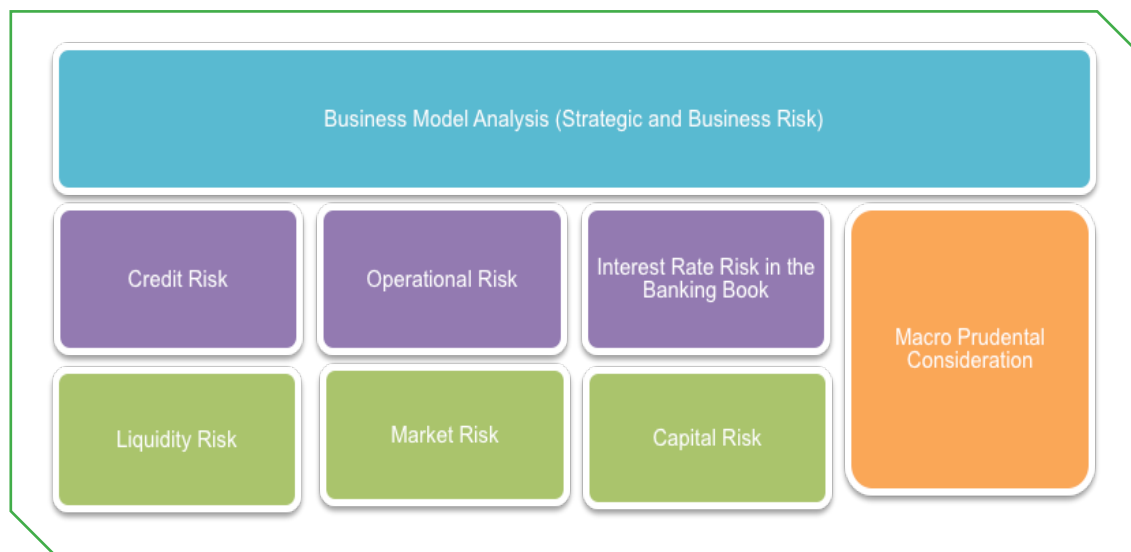
e. Stress-testing and Contingency Strategies

The bank should apply proportionate but appropriate stress-testing techniques in its strategic planning and management processes with the aim of identifying any potential threats to the implementation of its strategies. The selected stress testing techniques should not be limited to quantitative analyses but should also include the use of qualitative approaches and generation of outcomes, including appropriate management action aimed at mitigating against strategic risk.

8. ASSESSMENT OF INDIVIDUAL RISKS

66. The following individual risk types should, where relevant, be considered in the Full Risk Assessment (FRA), process phase. The FRA should, where applicable, be aligned to the Supervisory Review Process (SREP) under Pillar 2 of the Basel Capital Framework. The frequency and intensity of the FRA should be determined based on the impact rating of the relevant bank and the outcome of Business Model Analysis (BMA). It should in particular take into account the proportionality principle through a risk-based supervisory framework.

Figure 5: Individual Risks under consideration



67. Where applicable, importance should be given to non-banking group entities in the assessment of the risks run by a bank or banking group, e.g. insurance or asset management subsidiaries. Banks with similar risk profiles could also be assessed as part of a thematic review. Consideration should also be given to the potential impact of unregulated entities within a financial conglomerate. These could include, where relevant: (a) operating and non-operating holding companies, (b) unregulated parent companies and subsidiaries, and (c) Special Purpose Vehicles (SPV). The main objective should be to reduce the risk of regulatory arbitrage and the risk to the banking entity which could arise emanate from unregulated entities within the wider group
68. In supervising financial conglomerates, particular attention should be given to the recommendations set out in the BCBS/Joint Forum paper on **“Principles for the supervision of financial conglomerates, September 2012”**. The review of

the financial conglomerates should, amongst others, take into account: (a) inter-connectedness, (b) inter-group transactions and exposures, (c) risk transfer and management practices, (d) the potential for strategic and reputational risk, (e) risk exposures and concentrations, and (f) any contractual obligations.

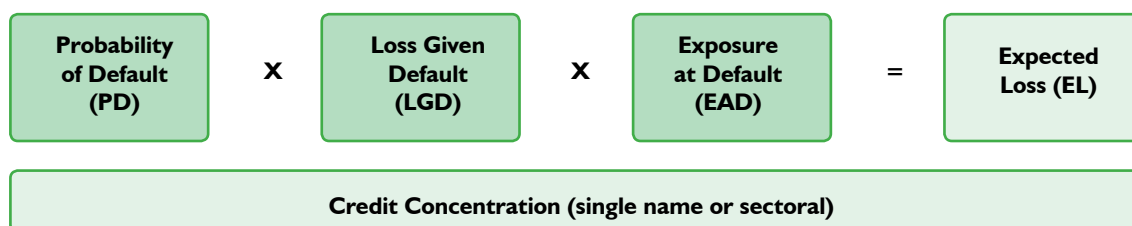
69. To facilitate consolidated supervision and effective supervision of cross-border institutions, the supervisory authorities should enter into information sharing arrangements with other regulatory authorities involved in the supervision of the activities of the cross-border institutions. The sharing of information through having in place an arrangement for college of supervisors , and holding regular meetings aimed at reviewing the risk profile of the relevant regulated entities and, where necessary, reaching a joint decision.

8.1 Credit Risk

8.1.1 Key Consideration

70. The assessment of credit risk should take into consideration the credit risk arising from all on and off-balance sheet banking book exposures including, where relevant, counterparty credit risk arising from holding of derivatives and from securities lending activities. In the assessment of the level of credit risk, particular consideration should be given to: (a) probability of occurrence of a credit event or correlated credit events that may affect the ability of the borrowers to meet their obligations, i.e., Probability of Default (PD), (b) the potential recovery rates or the Loss Given Default (LGD), and (c) the distribution of exposures across individual borrowers, and industrial and geographical segments.

Figure 6: Drivers of Credit Losses



71. The assessment of credit risk should also take into consideration the possibility that the key drivers of the performance of the relevant bank's credit portfolio (e.g., Gross Domestic Product, interest rates, unemployment rate, collateral prices etc) may deteriorate over time, and that the overall performance of the portfolio could deviate from the expectation. Further, the assessment should take into account the outcome of the bank's internal credit risk stress tests, which should be based on

severe but plausible scenarios and methodology that takes into account the best practice as set out in the BCBS Principles on Stress Testing.

72. The assessment should also take into consideration the expectation of: (a) Basel Core Principles for Effective Banking and the related Essential Criteria as set out in the tables below, (b) BCBS Principles for Management of Credit Risk (September, 2000).

Table 4: Basel Core Principles on Credit Risk

Basel Core Principle I: Credit Risk

The supervisor determines that banks have adequate credit risk management process that takes into account their risk appetite, risk profile and market and macroeconomic conditions. This includes prudent policies and processes to identify, measure, evaluate, monitor, report and control or mitigate credit risk (including counterparty credit risk) on a timely basis.

- EC 1: The supervisor determines that the processes are consistent with the risk appetite, risk profile, systemic importance and capital strength of the bank, take into account market and macroeconomic conditions and result in prudent standards of credit underwriting, evaluation, administration and monitoring.
- EC2: The supervisor determines that a bank's Board approves, and regularly reviews, the credit risk management strategy and significant policies and processes for assuming, identifying, measuring, evaluating, monitoring, reporting and controlling or mitigating credit risk (including counterparty credit risk and associated potential future exposure) and that these are consistent with the risk appetite set by the Board.
- EC3: The supervisor requires, and regularly determines, that such policies and processes establish an appropriate and properly controlled credit risk environment.
- EC4: The supervisor determines that banks have policies and processes to monitor the total indebtedness of entities to which they extend credit and any risk factors that may result in default including significant unhedged foreign exchange risk.
- EC 8: The supervisor requires banks to include their credit risk exposures into their stress testing programmes for risk management purposes.

Basel Core Principle 18: Problem Assets, Provisions and Reserves:

The supervisor determines that banks have adequate policies and processes for the early identification and management of problem assets, and the maintenance of adequate provisions and reserves.

EC 2: The supervisor determines the adequacy of a bank’s policies and processes for grading and classifying its assets and establishing appropriate and robust provisioning levels.

EC 3: The supervisor determines that the bank’s system for classification and provisioning takes into account off-balance sheet exposures.

EC 4: The supervisor determines that banks have appropriate policies and processes to ensure that provisions and write-offs are timely and reflect realistic repayment and recovery expectations, taking into account market and macroeconomic conditions.

EC 5: The supervisor determines that banks have appropriate policies and processes, and organisational resources for the early identification of deteriorating assets, for ongoing oversight of problem assets, and for collecting on past due obligations.

EC 8: The supervisor requires banks to have appropriate mechanisms in place for regularly assessing the value of risk mitigants, including guarantees, credit derivatives and collateral.

Basel Core Principle 19: Concentration Risk and Large Exposure Limits

The supervisor determines that banks have adequate policies and processes to identify, measure, evaluate, monitor, report and control or mitigate concentrations of risk on a timely basis.

EC 7: The supervisor requires banks to include the impact of significant risk concentrations into their stress testing programmes for risk management purposes.

8.1.2 Assessment of the Inherent Credit Risk

73. The assessment of the inherent credit risk should take into consideration the main drivers of the performance of the bank’s credit portfolio and the potential impact of crystallisation of severe but plausible credit risk event on the solvency position of the bank. Generally, the assessment of credit risk should involve the following five (5) key steps:

Figure 7: Assessment of Credit Risk



74. **Preliminary Assessment:** This should involve the assessment of: (a) the quality of the board approved credit risk strategy and the appropriateness of the adopted risk appetite, (b) the nature, size and composition of the banks on and off-balance sheet credit exposures, (c) the level and volatility of the bank's credit loss provisions and write-offs, and (d) the level and volatility of the bank's credit portfolio's Observed Default Rate (ODR). The assessment, where deemed necessary, could focus only on the bank's material portfolios and exposures.
75. **Nature and Composition of the Credit Portfolio:** The key objective of the assessment of the nature and composition of the bank's credit portfolio is to identify the underlying risk factors that could adversely impact the performance of the bank's credit portfolio. The assessment involves the review of the type of borrowers (e.g., retail, corporate, institutional, sovereign, etc) and the nature of the exposures (e.g., direct credit exposure, guarantees, undrawn credit facilities, letters of credit etc). The sub-categories of credit risk that could be taken into account, where relevant, includes: (i) single name and sectoral credit concentration risk, (ii) counterparty credit risk and settlement risk, (iii) country risk, (iv) Foreign Currency (FX) lending risk, and (v) the risk arising as a result of specialised lending e.g., project finance, object finance, etc.
76. **Assessment of portfolio credit quality:** The analysis of the quality of the credit portfolio should be aimed at distinguishing between the: (i) performing, (ii) non-performing, and (iii) forborne exposures.
- a) The assessment of the credit quality of the performing exposures should take into consideration: (a) the change in the portfolio in terms of composition, size and creditworthiness, (b) the profitability and the risks of future deterioration of the portfolio as a result of external factors and shocks, e.g., adverse movements in GDP, unemployment rates, interest rates, FX rates, etc, (d) growth rates of credit

exposures by type of borrowers, sectors and geographical location of borrowers, and (e) potential sensitivity of the borrower's repayment capacity to the economic cycle and key macroeconomic stress test shocks.

- b) The assessment of forborne accounts should take into account: (a) the forbearance rates per portfolio and the evolution of this rate over time, (b) the level of collateralisation of the forborne exposures, and (c) the migration rates of forborne exposures to performing and non-performing exposures. The type of forbearance or loan modification option should also be taken into account, e.g., whether the forbearance is short-term or long-term. The potential impact of the forbearance option on the Present Value of Cash Flow (PVCF) from loan or facility should also be taken into consideration.
- c) The assessment of non-performing exposures, on the other hand, should take into consideration: (a) the level of non-performing loans per portfolio, industry and geographical location, and the evolution of this rate over time, (b) the nature and adequacy of the collateral pledged in relation to the exposures already in default, (c) historical recovery rates at sub-portfolio level, and (f) the vintage of the non-performing loan portfolio.

Box 5: Definition of Forbearance

Forbearance occurs when: (a) a counterparty is experiencing financial difficulty in meeting its financial commitments, and (b) a bank grants a concession that it would not otherwise consider, irrespective of whether the concession is at the discretion of the bank and/or the counterparty. Forbearance includes concessions extended to any exposure in the form of a loan, a debt security or an off-balance sheet item due to financial difficulties of the counterparty.

There are many types of concessions granted by lenders or exercised by counterparties in existing contracts that could be considered as forbearance. Not all concessions may lead to a reduction in the net present value of the loan. The most common concessions are: (a) extending the loan term, (b) rescheduling the dates of payment of principal or interest, (c) granting new or additional periods of no payments (grace period), (d) reducing the interest rate, (e) capitalization of arrears, (f) forgiving, deferring or postponing principal, interest or relevant fees, (g) changing an amortizing loan to an interest payment only, (h) releasing collateral or accepting lower levels of collateralization, (i) allowing the conversion of debt to equity of the counterparty, and (j) deferring recovery or collection actions for extended periods of time.

The exercise of clauses embedded in the contract that enable the counterparty to change the terms and conditions of its contract or to take on additional loans, debt securities or off-balance sheet elements at its own discretion should be treated as concessions if the bank assesses that the counterparty is in financial difficulty.

Source: BCBS, Consultative Document, Guidelines on Prudential Treatment of Problem Assets – Definition of Non-Performing Exposures and Forbearance.

- 77. Assessment of the level and quality of credit risk mitigation:** The assessment of the level and quality of credit risk mitigation involves consideration of the level and quality of guarantees and collaterals. The assessment, in particular, should take into account: (a) the level of coverage of collateral and guarantees, (b) historical recovery rates, (c) the enforceability of collateral arrangements and guarantees given the local legislation, (d) the liquidity and volatility of asset values for collateral including the potential cost of liquidating the collateral, and (e) repossession procedures, and any potential legal constraints to repossessions. This could include potential consumer protection arrangement that may impair the ability of the lender to forcefully repossess the collateral underlying the defaulted loans or the provisions of the bankruptcy or personal insolvency legislation.
- 78. Assessment of the level of loan loss provisions:** The assessment of the level of loan loss provisions should be aimed at evaluating whether the level of loan loss provisions is reasonable given the level of risk. The assessment could, where possible, leverage off any Asset Quality Reviews (AQR) carried out by the supervisor, or in conjunction with other third parties. The assessment could also involve a review of the bank's provisioning methodologies including the inputs and assumptions underlying the quantitative collective provisioning models in place. The basis of the valuation of the collaterals could also be reviewed for reasonableness with this being done, possibly, as part of an onsite inspection involving sample testing of specific cases.
79. Generally, country risk should form part of the assessment of credit risk. However, where it is deemed to be significantly material compared to other credit risk sub-type, then it should be assessed as a separate individual risk type as opposed to assessment as a sub-category of credit risk.

8.1.3 Assessment of credit risk management and controls

80. The assessment of credit risk management and control should include a review of the banks: (a) credit risk strategy and appetite, (b) organisational framework for management of credit risk, (c) credit risk management policies and procedures, (d) approach to identification, measurement, management, monitoring and reporting of credit risk, and (e) overall internal control framework for the management of credit risk. The assessment, in particular, should be aimed at assessing whether the bank has:
- a. Documented credit risk strategy and appetite that is sound, appropriate, and that is approved at the appropriate management level.
 - b. Appropriate organisational framework to facilitate effective management, measurement and control of credit risk, and sufficient resources to carry out the required credit related tasks.

- c. Appropriate policies and procedures for the identification, management, measurement and control of credit risk.
- d. Appropriate framework for the identification, measurement, monitoring and reporting of credit risk, and a proper process aimed at ensuring the appropriateness of data, information systems and analytical techniques used by the bank to identify and monitor credit risk.
- e. Strong and comprehensive control framework to mitigate against credit risk which is in line with the approved credit risk strategy and appetite.

8.1.4 Scoring of the inherent credit risk

81. As per the key considerations set out above, the bank’s inherent credit risk should be scored on a four point scale as per the summary criteria set out in the table below. The criterion below is meant to be high-level and hence may not be exhaustive. The final rating should, in particular, be subject to a rigorous internal challenge at various management levels within the regulatory body and the rationale for the final risk and control score should be documented.

Table 5: Considerations for assigning score for credit risk

Risk Rating	Consideration for inherent risk	Risk Rating	Consideration for inherent risk
L	<ul style="list-style-type: none"> • The nature and composition of credit risk exposures implies non-material risk • Level of credit concentration risk not material • The level of non-performing and forborne exposures not material • Coverage of provisions very high • Very high coverage and quality of collateral and guarantees 	MH	<ul style="list-style-type: none"> • The nature and composition of credit risk exposures implies medium risk • Medium level of credit concentration risk • Medium level of non-performing and forborne exposures • Medium coverage of provisions and credit value adjustments • Medium coverage and quality of collateral and guarantees
ML	<ul style="list-style-type: none"> • The nature and composition of credit risk exposures implies low risk • Low level of credit concentration risk • Low level of non-performing and forborne exposures • High coverage of provisions and credit value adjustments • High coverage and quality of collateral and guarantees 	H	<ul style="list-style-type: none"> • The nature and composition of credit risk exposures implies high risk • High level of credit concentration risk • High level of non-performing and forborne exposures • High coverage of provisions and credit value adjustments • High coverage and quality of collateral and guarantees

8.1.5 Scoring of management and controls for credit risk

82. The assessment and scoring of the adequacy of management and controls in relation to credit risk should take into account the following:
- a) Consistency between the bank's adopted credit-risk policy and strategy and its overall (board approved) strategy and risk appetite.
 - b) Robustness of the organisational framework for the management of credit risk. This includes the presence of comprehensively documented responsibilities and appropriate separation of roles and responsibilities between risk takers, and management and control functions.
 - c) Appropriateness of credit-risk measurement, monitoring and reporting systems and the soundness of the control framework for credit risk. This should include the presence of a process aimed at ensuring the adopted risk measurement methodologies and systems are periodically validated by a well-qualified and independent validation unit. The expectation is also that the inputs and assumptions underlying such risk measurement methodologies should be subject to periodical review by the internal audit.
 - d) Limit system that allows credit risk to be mitigated or reduced are in line with the bank's credit risk management strategy and risk appetite. In particular, the risk limits should be well disseminated to all the relevant individuals and the limits should be set at such a level to ensure that it serves the intended purpose of limiting risk taking. Further, there should be a process aimed at ensuring that the risk limits are subject to stress test with the aim of identifying events that could result in the bank breaching the approved risk limits.

8.1.6 Credit risk management framework

83. The following table sets out the high level expectation of the bank's credit risk management framework. The provisions set out below should, together with the criteria set out above, form the basis for the assessment of the bank's inherent credit risk, and the quality of controls and governance around credit risk.

Credit Risk Management Framework

a. Introduction

The bank's credit risk should be managed within the context of an overall corporate strategy and should not be done in isolation or on a standalone basis. A typical credit risk management framework should, appropriately, capture: (i) the oversight role of the Board and senior management, and (ii) policies and procedures for identification, measurement, monitoring and control of credit and related risks. The other consideration that should be taken into account include: regular review of the credit portfolio, prevention of conflict of interest in the original and ongoing monitoring of credit exposures, and implementation of a robust management information systems that facilitates efficient management of the overall credit portfolio and individual credit exposures.

b. Board and Senior Management Oversight

The Board of Directors is ultimately responsible for the management of the bank's credit risk inherent in the supervised banks. To discharge its obligation, the board of directors should: (i) constitute a credit committee, and (ii) delegate, as appropriate, the role of developing suitable credit policies and procedures. The Board of Directors should also implement a process aimed at ensuring compliance with the adopted credit risk management framework.

c. Delegation of Authority

The bank should have an established process for assignment of responsibility for approval of credit and any changes in the terms and conditions of borrowing or other credit exposures. The overall lending authority structure should be approved by the board, which should also be ultimately responsible for delegating the authority for sanctioning of credit to senior management and the credit committee.

The bank's adopted credit policy should spell out the escalation process to ensure appropriate reporting and approval of credit extension beyond prescribed limits. There should also be a formal process aimed at ensuring adherence to the approved lending standards, and the assigned lending authority should be reviewed on a periodical basis to ensure that they continue to be fit-for-purpose.

d. Responsibilities of Senior Management

The responsibility for implementation of credit risk management strategies and policies, and for ensuring that procedures are put in place to manage and control credit risk should rest with the bank's senior management.

e. Credit Strategy, Policies, Procedures and Limits

The credit risk strategy should articulate: (i) the bank's lending plan, and particularly in relation to client segments and products, economic sectors, geographical location, currency and maturity; (ii) target market and expected level of diversification of the credit portfolio, and (ii)

Credit Risk Management Framework

overall pricing strategy. The credit strategy should, in particular, be aimed at providing continuity consistency in approach and should take into account macroeconomic environment, and the resulting changes in the quality and composition of the bank's credit portfolio. It should be reviewed periodically and should be viable in long term and under different economic scenarios.

The implemented credit procedures should facilitate a full understanding of the bank's clients while credit policies should establish an appropriate framework for taking lending decision in line with the bank's credit risk appetite. The policies, to be effective, should be communicated in a timely manner to all the appropriate levels with the bank. There should also be a process for escalation of any significant deviations or exceptions from the requirements of the approved and procedures policies.

Exposure limits covering all credit exposures for single counterparties and group of connected counterparties should be established with the objective of minimizing the potential risk as a result reliance on large borrower or group of borrowers. The limits structure should take into account the credit quality of the counterparty, economic condition and the approved risk appetite. They should also be appropriately granular, and should be reviewed regularly to ensure that they continue to be appropriate given changes in the market conditions and the risk capacity of the bank.

f. Credit Cycle

The bank should conduct appropriate assessment of each credit prior to approval and disbursement of fund. The credit assessment should be independent of the sales function to ensure that credit risk is appropriately analyzed and reviewed, and that any lending is in line with the bank's credit policies

g. Documentation

The terms of each credit exposure should be adequately and accurately documented. In particular, the credit file should include: the relevant details of the borrower, assessment of borrowing and repayment capacity, description and valuation of collateral, etc.

h. Stress Testing of Credit Risk

The bank should conduct rigorous, forward looking stress-tests aimed at the identification of events or changes in market conditions that could adversely impact on asset quality and consequently capital. The stress testing policy should be approved by the board, which should also review and challenge the results of credit stress tests, and the stress testing framework on a periodical basis.

The bank's senior management should also establish and implement procedures to guide the stress-testing process which should, at a minimum, articulate: (i) the individuals, committee or working group responsible for the stress testing programme at the bank, (ii) the frequency of

Credit Risk Management Framework

the stress testing exercise, (iii) scenario formulation and selection methodology, and (iv) the proposed remedial actions and trigger points for those actions.

The selected scenario should be aimed at capturing all the bank's specific credit vulnerabilities including the potential impact of feedback (second order) effects and interaction between credit risk and other risk types such as operational and market risk.

i. Credit Rating

The bank should have in place an appropriate credit rating system aimed at differentiating credit exposures based on their credit quality. This is to facilitate tracking of the level and trend in quality of individual credit and the overall credit portfolio including the level of concentration risk. There should also be a process for timely flagging of defaulted and impaired exposures, and estimation of the appropriate level of credit loss provisions. Appropriate loan loss provisioning process and methodology should be implemented and should be subject to periodical review to ensure that it continues to be fit-for-purpose.

j. Management of Risks Inherent in Insider Lending

The bank should implement a process aimed at ensuring that loans to insiders are at arms' length and that insiders are not treated in preferential manner. The lending to insiders should, in particular, comply with the terms and conditions stipulated under the relevant regulation.

k. Specialized credits

The bank should carry out its own independent analysis of syndicated loans and should not place reliance on work carried out by others including the lead institutions. The bank should also ensure that, in relation to cross border facilities, it does not take on risk exposures that differ significantly from the bank's risk strategy. Any cross border exposures should also be consistent the provisions of relevant laws and regulations in force.

l. Credit Review

The bank should regularly review the status of borrowers and re-evaluate individual credits including commitments and their ratings. The review should take into account: the financial condition of the borrower, collateral pledged including enforceability, and compliance with relevant covenants amongst others.

m. Off-balance sheet items

The bank should have in place an appropriate framework for the management of off-balance sheet exposures. This should include policies and procedures aimed at ensuring: (i) credit activities are in compliance with the institution's credit and accounting policies and procedures, and with the prevailing laws and regulations, (ii) credits disbursements are duly authorised and adequately captured, (iii) credits exposures are appropriately rated, (iv) potential problem

Credit Risk Management Framework

accounts are identified on a timely basis and assessed for provisioning purposes, (v) credit risk management information reports are timely, adequate and accurate.

n. Internal controls

The bank should establish a mechanism of independent, ongoing assessment of credit risk management process. The results of the periodical review should be properly documented and internally reported. The purpose of such reviews should be to assess the credit administration process, the accuracy of assigned credit rating and adequacy of provisions for credit losses, and quality of overall credit portfolio. Credit review should also be conducted on a consolidated group basis to factor in the business connections among related entities in a borrowing group.

o. Conflict of interest

The bank should implement comprehensive policies and procedures aimed at preventing conflict of interests and preserving confidentiality.

8.2 Market Risk

8.2.1 Key Consideration

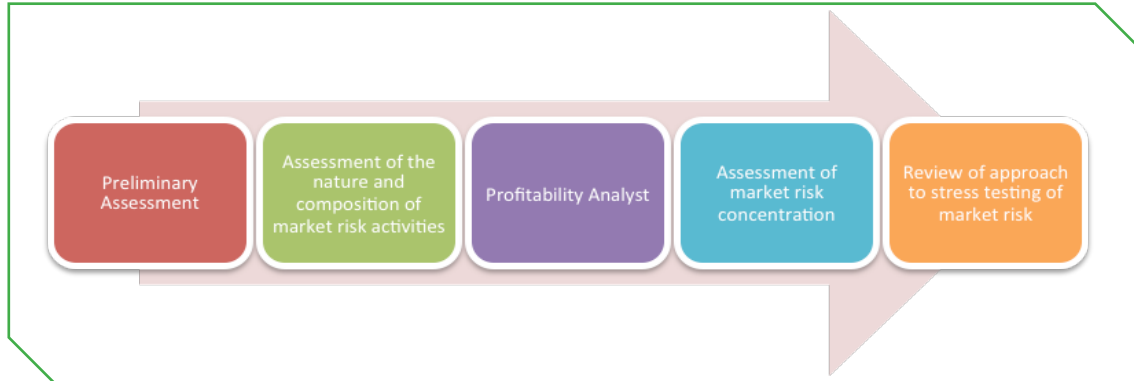
84. The assessment of the inherent market risk should cover all on and off-balance sheet positions subject to losses arising from movements in market prices. The Interest Rate Risk in the Banking Book (IRRBB) should however be excluded under market risk as it is considered as a separate risk type in these guidelines.
85. The assessment of market risk should take into account all the main drivers of the performance of the bank's trading book exposures. This may include movements in: interest rates, equity prices, foreign exchange rates and commodity prices.
86. One of the key considerations for assessment of market risk is the appropriateness of the documented criteria or policy for the delineation of the exposures between the banking book and the trading book. The documented criteria or policy should enable the supervised banks to appropriately profile their exposure to market risk.
87. The assessment of market risk should also take into consideration the expectation of the Basel Core Principles in relation to market risk as set out in the table below.

Table 7: Basel Core on Market Risk

Basel Core Principle 22: Market Risks
<p>The supervisor determines that banks have adequate market risk management process that takes into account their risk appetite, risk profile, market and macroeconomic conditions and the risk of a significant deterioration in market liquidity. This includes prudent policies and processes to identify, measure, evaluate, monitor, report and control or mitigate market risks on a timely basis.</p>
<p>EC 1: The supervisor require banks to have appropriate market risk management processes that provide a comprehensive bank-wide view of market risk exposure. The supervisor determines that these processes are consistent with the risk appetite, risk profile, systemic importance and capital strength of the bank; take into account market and macroeconomic conditions and the risk of a significant deterioration in market liquidity; and clearly articulate the roles and responsibilities for identification, measuring, monitoring and control of market risk.</p>
<p>EC 3: The supervisor determines that the bank’s policies and processes establish an appropriate and properly controlled market risk environment.</p>
<p>EC 4: The supervisor determines that there are systems and controls to ensure that banks’ marked-to-market positions are revalued frequently. The supervisor also determines that all transactions are captured on a timely basis and that the valuation process uses consistent and prudent practices, and reliable market data verified by a function independent of the relevant risk-taking business units (or, in the absence of market prices, internal or industry-accepted models).</p>
<p>EC 6: The supervisor requires banks to include market risk exposure into their stress testing programmes for risk management purposes.</p>

8.2.2 Assessment of Inherent Market Risk

88. The assessment and scoring of the inherent market risk should take into consideration the following five (5) steps:

Table 8: Assessment of inherent market risk

- 89. Preliminary Assessment:** The preliminary assessment of market risk should include a review of: (a) the bank’s trading activities, business lines and products, (b) the main strategy of the bank’s trading portfolio and the approved risk appetite in relation to market activities, and (c) the materiality of market (trading book) position and the historical net gains on market positions. The preliminary assessment should also involve a review of: (a) any significant changes in the bank’s market risk strategy, policies and limits, and the potential impact of those changes, if any, on the bank’s overall risk profile, and (c) significant trends in the financial markets likely to have an impact on the performance of the bank’s trading portfolio and market risk profile.
- 90. Nature and composition of market risk activities:** The analysis of market risk activities should take into account: the nature of the products traded by the bank, and the quality of the internal risk measures used by the bank to monitor the level of market risk. This could include a review of the list of the approved trading book activities and products, and the assessment of the independent validation report for the internal risk measurement tools used to measure market risk.
- 91. Profitability analysis:** This involves the analysis of historical profitability and volatility of market activities of the bank’s trading book with the aim of understanding the bank’s market risk profile.
- 92. Market risk concentration:** This involves assessment of the degree of market concentration arising either from exposure to a single risk factor or from exposures to multiple risk factors that are highly correlated. The market risk concentration could be to a specific section of the yield curve or foreign currency.
- 93. Stress Testing:** The assessment of the inherent market risk should also take into account the results of bank’s internal stress tests aimed at identification of any previously unidentified sources of market risk such as tail-risk events which may be entirely absent from historical data series because of their low frequency of occurrence.

8.2.3 Assessment of market risk management and controls

94. The assessment market risk management and controls should be aimed at assessing whether the bank has:
- a. Sound, clearly formulated and documented market risk strategy that has been appropriately approved by the Board.
 - b. Appropriate organisational framework for market risk management, measurement, monitoring and control functions, with sufficient human and technical resources.
 - c. Clearly defined policies and procedures for the identification, management, measurement and control of market risk.
 - d. Appropriate framework for identification, understanding and measuring market risk. This includes assessment of whether a bank has implemented adequate stress tests that complement its risk measurement system.
 - e. Strong and comprehensive control framework to mitigate against market risk in line with its market risk management strategy and risk appetite.

8.2.4 Scoring of the inherent market risk

95. As per the key considerations set out above, the bank's inherent market risk should be scored on a four point scale as per the summary criteria set out in the table below. The final rating should be subject to a rigorous internal challenge at various levels within the regulatory body and the rationale for the final risk and control score should be documented.

Table 9: Considerations for assigning score for the inherent market risk

Risk Rating	Consideration for inherent risk	Risk Rating	Consideration for inherent risk
L	<ul style="list-style-type: none"> The nature and composition of exposures imply that market risk is not material The level of market risk concentration is not material The bank's market risk exposures generate non-volatile returns 	ML	<ul style="list-style-type: none"> The nature and composition of market risk exposure imply low risk The level of market risk concentration is low The bank's market risk exposure generate a low volatility of returns
MH	<ul style="list-style-type: none"> The nature and composition of market risk exposures imply medium risk The level of market risk concentration is medium The bank's exposure to market risk generates a medium volatility of returns 	H	<ul style="list-style-type: none"> The nature and composition of market risk exposures imply material risk The level of market risk concentration is high The bank's exposures to market risk generates a high volatility of returns

8.2.5 FX Risk Management Framework

96. The following table sets out the high level expectation in relation to the bank's FX risk management framework. The provisions set out below should, together with the criteria set out above, form the basis for the assessment of the bank's quality of controls and governance for management of market risk and, in particular, FX risk.

Table 10: FX Risk Management Framework

a) Introduction

Banks should design sound foreign exchange risk management framework to deal with foreign exchange risk. The adopted foreign exchange risk management framework should where relevant, be in compliance with the minimum standards set by the regulatory authority on foreign exchange exposure and foreign exchange position limits. The foreign exchange risk management framework should, amongst others, capture: (i) Board and senior management oversight of FX and related risks, (ii) policies, procedures and limits for the management of FX risk, (iii) FX risk measurement, monitoring and management information systems, and (iv) internal controls for the management of FX risk.

b) Board and Senior Management Oversight

The Board of Directors and senior management of the bank should be ultimately responsible for the management of the institutions' exposure to foreign exchange risk and the overall level of FX risk assumed. The board should therefore review and approve the foreign exchange

FX Risk Management Framework

risk management policies and framework developed and recommended for approval by bank's senior management.

The specific responsibilities of the Board and senior management's should include: (i) formulation of the strategy for the management of FX risk and setting of the risk tolerance levels, (ii) implementation of the appropriate risk management systems and internal controls, (iii) monitoring any significant foreign exchange exposures, (iv) ensuring that FX operations, where relevant, are in compliance with FX control regulations, (v) ensuring that FX operations are supported by adequate resources including management information systems, and (vi) reviewing of policies, procedures and limits on a regular basis to ensure that they continue to be appropriate.

c) Policies and Procedures

The policies and procedures for management of FX risk should be clearly defined and communicated, and should be periodically reviewed and updated to ensure that they adequately capture the bank's risk profile and quality of the risk management systems. The FX policies and procedures should, in particular: (i) define roles and responsibilities, (ii) identify authorized financial instruments and hedging strategies, (iii) articulate the Board approved strategies for controlling the bank's FX risk exposures, (iv) define the quantitative limits on the acceptable level of FX risk for the bank, and (v) define procedures and conditions for dealing with exceptions to policies, limits, and authorizations.

d) Measuring and Limiting Foreign Exchange Risk

Banks should implement a process for measuring and limiting the size of the open FX positions in each currency as of the close of business each day and should, where applicable, comply with the regulator's prudential limit and other regulatory guidelines on FX exposure.

e) Management Information System

Banks should implement an appropriate MIS to facilitate effective management of FX risk. The implemented MIS should generate accurate and timely information to facilitate the identification, measurement and monitoring of the bank's FX risk. The generated FX reports should also be adequately comprehensive, accurate and should provide information at different levels of granularity, including flagging of exceptions to the adopted policies and procedures.

f) Internal Controls and Audit Reviews

Banks should conduct independent periodical reviews of their internal controls and risk management process for FX risk to ensure its integrity, accuracy and reasonableness. The reviews should, among others, ensure: (i) accuracy and completeness of accounting records, (ii) effective segregation of duties, (ii) effectiveness and accuracy of reporting of limit breaches and other exceptions to the adopted policies and procedures.

FX Risk Management Framework

The Internal Audit Function (IAF) should ensure that breaches and exceptions are properly followed up, and that any issues concerning controls in the trading area are appropriately escalated to senior management in a timely manner. Banks should also have a process in place aimed at ensuring prompt response to findings regarding any violations of established procedures and for ensuring that any identified weaknesses are adequately addressed.

g) Stress Testing

Banks should conduct periodic stress tests to assess the impact of fluctuations of FX rates on its earnings and capital position. The selected stress test scenarios should be adequately severe and the underlying stress test assumptions should be conservative.

8.3 Operational Risk

8.3.1 Key Considerations

97. The assessment of operational risk should take into account the expectation of the Basel Core Principles in relation to operational risk as set out in the table below and the Basel Principles for the sound management of operational risk (June 2011).

Table 11: Basel Core on Operational Risk

Basel Core Principle 25: Operational Risk

The supervisor determines that banks have adequate operational risk management framework that takes into account their risk appetite, risk profile, market and macroeconomic conditions. This includes prudent policies and processes to identify, assess, evaluate, monitor, report and control or mitigate operational risk on a timely basis.

- EC 1: The supervisor require banks to have appropriate operational risk management strategies, policies and processes to identify, assess, evaluate, monitor, report and control or mitigate operational risk. The supervisor determines that the bank's strategy, policies and processes are consistent with the bank's risk profile, systemic importance, risk appetite and capital strength, take into account market and macroeconomic conditions, and address all major aspects of operational risk prevalent in the businesses of the bank on a bank-wide basis (including periods when operational risk could increase).
- EC 2: The supervisor requires banks' strategies, policies and processes for the management of operational risk (including the banks' risk appetite for operational risk) to be approved and regularly reviewed by the banks' Boards. The supervisor also requires that the Board oversees management in ensuring that these policies and processes are implemented effectively.
- EC 3: The supervisor determines that the approved strategy and significant policies and processes for the management of operational risk are implemented effectively by management and fully integrated into the bank's overall risk management process.
- EC 4: The supervisor reviews the quality and comprehensiveness of the bank's disaster recovery and business continuity plans to assess their feasibility in scenarios of severe business disruption which might plausibly affect the bank.
- EC 5. The supervisor determines that banks have established appropriate information technology policies and processes to identify, assess, monitor and manage technology risks. The supervisor also determines that banks have appropriate and sound information technology infrastructure to meet their current and projected business requirements (under normal circumstances and in periods of stress), which ensures data and system integrity, security and availability and supports integrated and comprehensive risk management.
- EC 6: The supervisor determines that banks have appropriate and effective information systems to: (a) monitor operational risk, (b) compile and analyses operational risk data; and (c) facilitate appropriate reporting mechanisms at the banks' Boards, senior management and business line levels that support proactive management of operational risk.
- EC 8: The supervisor determines that banks have established appropriate policies and processes to assess, manage and monitor outsourced activities.

8.3.2 Assessment of inherent operational risk

98. The supervisory authority should develop a thorough understanding of the bank's business model, its operation, its risk culture and the environment in which it operates, as all these factors are potential drivers of a bank's exposure to operational risk.

99. The assessment should generally comprise two steps, which are: (a) preliminary assessment; and (b) assessment of the nature and significance of the operational risk exposures facing the bank.

100.Preliminary assessment: The preliminary assessment of operational risk should involve the identification of the sources of operational risks to which the bank is exposed to, based on: (a) the supervisory knowledge gained as part of the assessment of other material risk types, (b) comparison with peer bank, and(c) leveraging on other supervisory activities including on-site inspections. The following, amongst others, should be taken into consideration as part of the preliminary assessment of operational risk: (a) the bank's main strategy for management of operational risk and operational risk tolerance levels, (b) the business and external environment in which the bank operates in, (c) the bank's historical operational risk losses, (d) any recent significant corporate events that could have a material change on the bank's operational risk profile, (e) significant changes to the IT systems and processes, and (f) the relevant findings from the internal and external audit exercises.

101.Nature of operational risk exposures: The assessment of the nature of the operational risk exposures should include analysis of the main drivers of operational risk with the aim of forming a forward-looking view on the potential operational risk and losses. The analysis should, in particular, take into consideration: business lines, products, processes and geographies relevant to the bank as well as an assessment of exposure to primary drivers of operational risk, i.e. processes, people, systems and external factors.

102.Scenario analysis: The assessment of the operational risk and related sub-categories should include the use of bank's internal operational risk scenario analysis aimed at identification of bank's specific operational risk vulnerabilities. The following are some of the causal factors of operational risk⁴ which could be considered in the generation of operational risk scenarios. The supervisory authority as part of assessment of approach to measurement and management operation risk should assess the adequacy of the material causal drivers for each financial institution.

⁴Source: Key Risk Indicators: Their Role in Operational Risk Management and Measurement, Risk Business International Ltd

Table 12: Causal Drivers of Operational Risk

Processing Risks	Conduct Risks	External Risks
<ul style="list-style-type: none"> • Strategy (automation) • Management • External factors • People (staff turnover) • Technology (system outages) • Processing (Volumes) • Business Conditions 	<ul style="list-style-type: none"> • Strategy (mergers) • Management (segregation of duty) • External factors (regulatory changes) • People (fraud and theft) • Technology • Processes (negligence) • Business conditions 	<ul style="list-style-type: none"> • Strategy (high-risk countries) • Management • External factors (natural disasters) • People (fraud and theft) • Technology (Hacking) • Processes • Business conditions

103. The sub-categories of operational risk under consideration include, where relevant or material: (a) conduct risk, (b) IT systems risk, and (c) reputational risk.

- a) Conduct Risk:** The assessment should take into consideration potential: (a) mis-selling of products, and (b) conflict of interest in conducting business. The assessment should be based on, amongst others, consumer conduct guidelines and corporate governance codes that have been issued by the supervisory authorities.
- b) IT System Risk:** The assessment should take into account: (a) the quality and effectiveness of business continuity testing and planning, (b) the quality of access controls, (c) the accuracy and integrity of data used for reporting and risk management, and (d) quality of execution of IT related projects. The assessment, where applicable should take into account the outcome of IT inspection exercise or reviews carried out by the supervisory authorities or by independent third party entities such as the external auditors.
- c) Reputational Risk:** The assessment of reputational risk should leverage on the understanding of the bank's business model, quality of governance and its operating environment. The specific consideration to be taken into account could include: changes in share prices, number and significance of the regulatory sanctions, adverse media coverage including the social media, and the number and nature of complaints from third parties.

Box 6: Reputational Risk Questions to Consider

- a) Where does reputational risk rank compared to other strategic risks within the bank?
- b) Does the bank have a plan in place to manage reputational risk?
- c) Who “owns” reputational risk within the bank?
- d) What investments are currently being made by the bank to manage reputational risks?
- e) How does the bank measure reputational risk and how often?
- f) Does the bank use reputational risk sensing tools?
- g) Does the bank have a crisis management team in place? If so, does that team have the training required to mitigate any potential reputational damage?
- h) Within the bank, what role would the board play in responding to a reputational incident, and is that role clearly defined?
- i) Does the bank have a communications strategy in place to build firm-wide awareness around reputation risk and the role each employee plays in managing it?

Adapted from: Chuck Saia, Chief risk, reputation and regulatory affairs officer at Deloitte LLP

8.3.3 Assessment of Operational Risk Management, Measurement and Controls

104. The assessment of the bank’s framework for the management, measurement and control of operational risk should take into account the outcome of the assessment of the overall risk management and internal control framework. The review should particularly take into consideration: (a) the quality of the overall approach to management of operational risk, (b) the effectiveness of the organisational structure for the management of operational risk, (c) appropriateness of the policies and procedures for management of operational risk, (d) quality of internal control framework, (e) quality of the processes for identification, measurement, monitoring and reporting of operational risk, and (f) comprehensiveness of the business continuity planning.

8.3.4 Scoring of the Inherent Operational Risk

105. As per the key considerations set out above, the bank’s inherent operational risk should be scored on a four point scale as per the summary criteria set out in the table below. The final rating should be subject to a rigorous internal challenge at various levels within the regulatory body and the rationale for the final risk and control score should be documented.

Table 13: Consideration for assigning a score for operational risk

Risk Rating	Consideration for inherent risk	Risk Rating	Consideration for inherent risk
L	<ul style="list-style-type: none"> • The nature of the bank’s operational risk exposures is limited to few high-frequencies to low-severity impact categories. • The significance of the bank’s exposure to operational risk is not material, as shown by scenario analysis and compared to the losses of peers. • The level of operational risk losses experienced by the bank in recent years has not been material, or has decreased from a higher level. 	ML	<ul style="list-style-type: none"> • The nature of the bank’s operational risk exposures is mainly high-frequency to low-severity impact categories. • The significance of the bank’s exposure to operational risk is low, as shown by scenario analysis and compared to the losses of peers. • The level of operational risk losses experienced by the bank in recent years has been low, or is expected to increase from a lower historic level or decrease from a higher historic level.
MH	<ul style="list-style-type: none"> • The nature of the bank’s operational risk exposures extends to some low-frequency to high-severity impact categories. • The significance of the bank’s exposure to operational risk is medium, as shown by scenario analysis and compared to the losses of peers. • The level of operational risk losses experienced by the bank over the last few years has been medium, or is expected to increase from a lower historic level or decrease from a higher historic level. 	H	<ul style="list-style-type: none"> • The nature of the bank’s operational risk exposures extends to low frequency to high-severity impact categories. • The significance of the bank’s exposure to operational risk is high and increasing, as shown by scenario analysis and compared to the losses of peers. • The level of operational risk losses experienced by the bank over the last few years has been high, or risk has significantly increased.

8.3.5 Operational Risk Management Framework

106. The following table sets out the high level expectation in relation to the bank’s operational risk management framework. The provisions set out below should, together with the criteria set out above, form the basis for the assessment of the quality of the bank’s controls and governance in relation to operational risk.

Operational Risk Management Framework

a) Introduction

The framework should cover the bank's appetite and tolerance for operational risk, as specified through the policies for managing this risk, including the extent and manner in which operational risk is transferred outside the bank. It should also include policies outlining the bank's approach to identifying, measuring, monitoring and controlling/mitigating the risk. The objective of operational risk management should be to assess the potential extent of the bank's operational risk exposure and its drivers, and to facilitate capital allocation.

b) Operational Risk Management Framework

Sound risk management framework for operational risk should include: (i) Board and Senior Management Oversight, (ii) Policies, Procedures and Limits, (iii) Risk Measurement, Monitoring and Management Information Systems, and (iv) Internal Controls.

c) Board and Senior Management Oversight

The ultimate responsibility for operational risk management should rest with the Board. The board and senior management should ensure that there is an effective and integrated operational risk management framework. This should incorporate an appropriate organizational structure with clearly defined roles and responsibilities for all aspects of operational risk management as well as appropriate tools that support the identification, measurement, monitoring and control of the key operational risks. The board should set a strategic direction and establish tolerance level in relation to operational risk while senior management should ensure that the operational risk management policy is communicated and understood throughout in the bank. The senior management should also establish monitoring and control processes in order to have effective implementation of the policy.

d) Specific Responsibilities of Senior Management

The senior management of the bank should be responsible for: (i) the implementation of the operational risk management framework, (ii) the development of policies, processes and procedures for managing operational risk. They should clearly assign authority, responsibility and reporting relationships to encourage and maintain this accountability, and ensure that the necessary resources are available to manage operational risk effectively. Senior management should ensure that the institution's operational risk management policy has been clearly communicated to all the relevant staff and should, amongst others, ensure that the institution's remuneration policies are consistent with its appetite for risk.

e) Policies, Procedures and Limits

The operational risk management process should be articulated in the bank's operational risk policies and procedures, duly approved by the Board. The operational risk management policy should be regularly reviewed and updated, to ensure it continue to be fit-for-purpose.

Operational Risk Management Framework

The operational risk management policy should include: (i) overall risk management strategy, (ii) the systems and procedures aimed at ensuring that operational risk management framework is effective, (iii) the structure of operational risk management function, and (iv) distribution of roles and responsibilities.

There should also be a formal new product review process involving business, risk management and internal control functions. The bank should also update its operational risk management policies and procedures as products and activities change and as deficiencies are discovered.

f) Measurement of Operational Risk

The bank should identify and assess the operational risk inherent in all products, activities, processes and systems and its vulnerability to these risks. The bank should also ensure that before new products, activities, processes and systems are introduced or undertaken, the operational risk inherent in them is subject to adequate assessment procedures.

The bank should have a process in place for continually tracking operational risk data and the data should to be commensurate with the bank's operational risk profile and approach to managing risk. The bank should also have in place sound internal reporting practices and systems that are consistent with in scope of operational risk.

g) Risk Identification

The identification process should decompose operational risk into those risks that are closely related to internal processes, people, systems and those risks that are more related to the external environment. The key sources of operational risk include outsourcing risk, people risk, process risk, data integrity, information risk, management information system risk and technology risk. Generally, operational risk can be associated with the prevalence of the following events:

Transaction	Operational control	Systems
Execution error Booking error Settlement error Documentation error Product complexity	Exceeding limits Rogue trading Frauds and forgeries Money Laundering Inadequate Security	Programming error Inadequate MIS IT systems failure Telecommunication failure

h) Outsourcing Risk

The bank should establish policies for managing the risks associated with outsourcing activities.

Operational Risk Management Framework

It should be recognized that the use of third parties does not diminish the responsibility of the board and senior management of ensuring that the third-party activity is conducted in a safe and sound manner and in compliance with applicable laws.

The bank's outsourcing arrangements should be based on robust contracts and/or service level agreements that ensure a clear allocation of responsibilities between external service providers and the bank. The bank should also specifically have a process in place for management of any residual risks associated with outsourcing arrangements, including disruption of services.

i) People risk

People risk exposure may arise as a result of: (i) lack of adequate skills or experience, (ii) inadequate training and development, (iii) improperly aligned compensation schemes or incentives, (iv) lack of understanding of performance standards or expectations, and (v) inadequate human resource controls including supervision and the segregation of duties.

Effective communication of responsibilities is an important component of people risk. Prudent management of assigned responsibilities and an effective risk management and control environment are, in varying degrees, the responsibility of all personnel within an institution. All individuals need to carry out their responsibilities in an appropriate manner and to feel comfortable in communicating openly and proactively to senior management any significant issues or adverse events that come to their attention.

Effective segregation of duties should involve a clear separation of responsibilities between those persons who authorize, supervise, initiate or execute transactions and those who record and account for such transactions. The underlying principle is that no one person should be in a position to control sufficient stages of a transaction to cause errors to occur without a reasonable chance of detection.

j) Process Risk

Documenting significant business activity and risk management processes, policies, procedures and controls can assist in reducing the occurrence of undetected errors or misconduct. It also assists in: (i) identifying the factors that are susceptible to these risks, (ii) evaluating the probability and potential significance of their occurrence, (iii) ensuring that sufficient preventive and detective controls are in place, and (iv) providing guidance to individuals in the performance of their responsibilities.

k) Integrity of Information Risk

A risk faced by all banks is that decision-makers could make incorrect or inappropriate decisions as a result of accounting or other key information which does not accurately reflect the results of business activities. The bank should therefore implement good accounting, record-keeping and valuation practices.

Operational Risk Management Framework

The adopted practice should be aimed at ensuring that: (i) accounting policies and practices are appropriate, (ii) appropriate records and other key information are maintained, (iii) there are effective controls over accounting and other key information, (iv) assets and liabilities are appropriately valued and accounted for, and (v) individuals or groups with decision-making responsibilities are provided with complete, accurate and timely information.

l) Management Information Systems Risk

The frequency with which information is prepared, the level of detail, the amount of narrative analysis and explanation and the form in which information is communicated should depend upon the nature and complexity of the business operations. The bank should review its information systems regularly to assess the current relevance of information generated and the adequacy and quality of the system's performance over time.

m) Technology Risk

The potential for loss from disruption to business activities as a result of inadequate or obsolete technology or from a failure or interruption in technology caused by events within or outside an institution presents a potentially significant risk.

Technological development and maintenance processes should provide assurance on: (i) the current and planned technology strategy, and its alignment with the bank's business strategy and business needs, (ii) process of authorization, testing and documentation of the relevant technologies before they are put into place.

The bank's process should cover: (i) technology facilities, hardware, software, and data files, and (ii) access controls to technologies and information. The bank should also have backup and recovery processes and standby arrangements to enable it resume its business activities in the event of a technology or other disruption. These arrangements should also be reviewed and subjected to stress tests on a periodical basis.

n) Contingency Planning

The bank should have in place contingency and business continuity plans to ensure that they continue to operate as going concerns and minimize losses in the event of severe business disruption.

o) Risk monitoring and Management Information Systems

The bank should implement a system for monitoring operational risk exposures and loss events on an on-going basis. The bank should monitor operational losses directly, with a report of each occurrence and a description of the nature and causes of loss provided to senior managers and the board of directors. The frequency of monitoring should reflect the risks involved and the frequency and nature of changes in the operating environment. The results of these monitoring activities should be included in management and board reports, and subjected to

Operational Risk Management Framework

p) Control of Operational Risk

The bank should assess the costs and benefits of alternative risk mitigation and control strategies and should manage their operational risk exposure by using appropriate strategies, in light of their overall risk profile. The bank should also put in place an adequate system of controls that can protect all the systems from unauthorized intrusion or access. It should also conduct penetration tests on a periodical basis to assess the adequacy of the IT controls in place.

q) Internal Controls and Audit

The controls should include the full range of control activities such as segregation of duties, clear reporting lines and adequate operating procedures. Activities of internal audit function should also form an important element of operational risk management.

8.4 Liquidity and Funding Risk

8.4.1 Key Consideration

107. The assessment of liquidity and funding risk should take into account the expectation of the Basel Core Principles in relation to liquidity risk as set out in the table below and the Basel Principles for the Sound Liquidity Risk Management (September 2008).

Table 15: Basel Core Principle on Liquidity

Basel Core Principle 24: Liquidity Risk

The supervisor determines that banks have a strategy that enables prudent management of liquidity risk and compliance with liquidity requirements. The strategy takes into account the bank's risk profile as well as market and macroeconomic conditions and includes prudent policies and processes, consistent with the bank's risk appetite, to identify, measure, evaluate, monitor, report and control or mitigate liquidity risk over an appropriate set of time horizons.

EC 3: The supervisor determines that banks have a robust liquidity management framework that requires the banks to maintain sufficient liquidity to withstand a range of stress events, and includes appropriate policies and processes for managing liquidity risk that have been approved by the banks' Board. The supervisor also determines that these policies and processes provide a comprehensive bank-wide view of liquidity risk and are consistent with the banks' risk profile and systemic importance.

EC 4: The supervisor determines that banks' liquidity strategy, policies and processes establish an appropriate and properly controlled liquidity risk environment.

EC 5: The supervisor requires banks to establish, and regularly review, funding strategies and policies and processes for the ongoing measurement and monitoring of funding requirements and the effective management of funding risk. The policies and processes include consideration of how other risks (e.g. credit, market, operational and reputation risk) may impact the bank's overall liquidity strategy.

EC 6: The supervisor determines that banks have robust liquidity contingency funding plans to handle liquidity problems. The supervisor determines that the bank's contingency funding plan is formally articulated, adequately documented and sets out the bank's strategy for addressing liquidity shortfalls in a range of stress environments without placing reliance on lender of last resort support. The supervisor also determines that the bank's contingency funding plan establishes clear lines of responsibility, includes clear communication plans (including communication with the supervisor) and is regularly tested and updated to ensure it is operationally robust.

EC 7: The supervisor requires banks to include a variety of short-term and protracted bank-specific and market-wide liquidity stress scenarios (individually and in combination), using conservative and regularly reviewed assumptions, into their stress testing programmes for risk management purposes. The supervisor determines that the results of the stress tests are used by the bank to adjust its liquidity risk management strategies, policies and positions and to develop effective contingency funding plans.

8.4.2 Assessment of the Inherent Liquidity Risk

108. The assessment of liquidity risk should be aimed at evaluating the ability of the bank to maintain adequate levels of liquidity under both normal and stressed market conditions.
109. The evaluation of liquidity needs should take into account: (a) the liquidity requirements at different time bands under different stress scenarios ranging in the degree of severity (b) the size, location and currency of any liquidity requirements in case of cross-border banks.
110. The selected stress scenario should be appropriate and should, in particular, capture all the material sources of liquidity risk including the potential changes in behaviour of depositors and contingent cash flows. The stress scenario should also include operational stress and potential constraints to liquidity access (legal or otherwise).
111. The evaluation of liquidity position should take into account the bank's potential survival period under different severe but plausible stress scenarios, and the alignment between the actual liquidity buffer and the bank's liquidity risk tolerance.
112. The ability of a bank to realize its liquid assets in a time of stress should be taken into account. This should include assessment of: the level of asset encumbrance, bank's approach to testing of market access, currency in which the liquid assets are denominated, and the value of the committed liquidity facilities.
113. The Supervisory authorities could also, where deemed necessary, perform independent liquidity stress tests to assist in further assessing the liquidity risk inherent in a bank and to help in the identification of bank's specific liquidity vulnerabilities.

8.4.3 Assessing Inherent Funding Risk

114. The assessment of a bank's funding risk should capture the following: (a) funding profile, (b) potential risks to the funding profile, (c) actual market access, (d) expected changes in funding profile based on the approved funding plan.
115. The assessment of the potential risks to the funding profile should capture: the potential increases in funding costs and needs, and the potential increases in the level of asset encumbrance and its likely impact.
116. The supervisory authorities should also, where possible, collate and analyse information on the bank's actual market access and the factors that could adversely impact the bank's ability to access the market for liquidity purposes.

8.4.4 Assessing Liquidity and Funding Risk Management

- I17. The assessment of a bank's liquidity and funding management framework should include a review of: (a) the liquidity risk strategy and liquidity risk tolerance levels, (b) the organisational framework, policies and procedures for management of liquidity and funding risk, (c) the approach to identification, measurement, management, monitoring and reporting of liquidity and funding risk, (d) the quality of the bank's liquidity stress testing framework, and (e) the internal control framework for management of liquidity risk.
- I18. The evaluation of the bank's liquidity stress testing framework should take into account the appropriateness of the adopted stress testing framework particular for the identification of the bank's specific vulnerabilities including the potential survival horizon in the event of a liquidity shock. The consideration should include: (a) the frequency of the stress tests, (b) the role of outcome of liquidity stress test in the liquidity planning process, (c) the scenario formulation process, (d) the challenge process around the key assumptions and scenarios, and (d) any potential impediment to liquidity transfer particular across jurisdictions.
- I19. The following are some of the bank specific and systemic liquidity scenarios⁵ that supervisory authorities could assess for adequate capture by the supervised financial institutions.

Table 16: Liquidity Risk Scenarios

Bank Specific	Systemic
<ul style="list-style-type: none"> • Loss of confidence by fund providers • Reduced access to wholesale funding • Reduction in credit lines available and counterparty limits • increased haircuts and collateral calls • Reduction in asset prices • Utilisation of credit commitments; • Inability to draw down on pre-committed lines • Currency conversion; and • Increase in demand for financial funding by the entities within the group. 	<ul style="list-style-type: none"> • Marketable securities cannot be sold immediately • Repo markets and unsecured interbank markets are closed; • Credit lines granted are drawn by corporate clients; • Professional demand deposits are withdrawn; • Retail deposit stability decreases; • Foreign exchange (FX) market dislocation; • Inability to secure intra-group support; and

⁵Source: European Central Bank, EU Bank Liquidity Stress Testing and Contingency Funding Plans, November 2008

- I20. The assessment of internal control framework for management of liquidity risk should take into account: (a) the adequacy of the limit system, (b) role of outcome of stress testing in setting the relevant liquidity risk limits, (c) the process for, and frequency of, the review of risk limits, and (e) procedures for monitoring of compliance with the set risk limits. The implementation and the adequacy of the Fund Transfer Pricing (FTP) policies and procedures should also be assessed.
- I21. The assessment of the quality of the liquidity contingency plans should take into consideration: (a) the documented governance arrangements for its activation and maintenance, (b) the quality of the implemented set of Early Warning Indicators (EWI), (c) the appropriateness of the key underlying assumptions, and (d) capture of the bank's specific vulnerabilities.

8.4.5 Considerations for Assigning a Score to Liquidity Risk

- I22. As per the key considerations set out above, the bank's inherent liquidity risk should be scored on a four point scale as per the summary criteria set out in the table below. The final rating should be subject to a rigorous internal challenge at various levels within the supervisory body and the rationale for the final risk and control score should be documented.

Table 17: Consideration for assigning a score to liquidity and funding risk

Risk Score	Considerations for inherent risk	Risk Score	Considerations for inherent risk
L	<ul style="list-style-type: none"> • <u>Liquidity</u> • There is no discernible risk arising from mismatches • The size and composition of the liquidity buffer is adequate and appropriate. • Other drivers of liquidity risk are not material. • Funding • There is no discernible risk from the bank's funding profile or its sustainability. • The risk from the stability of funding is not material. • Other drivers of funding risk are not material. 	ML	<ul style="list-style-type: none"> • Liquidity • Mismatches imply low risk. • The risk from the size and composition of the liquidity buffer is low. • Other drivers of liquidity risk are low. • Funding • The risk from the bank's funding profile and its sustainability is low. • The risk from the stability of funding is low. • Other drivers of funding risk are low.
MH	<ul style="list-style-type: none"> • Liquidity • Mismatches imply medium risk. • The risk from the size and composition of the liquidity buffer is medium. • Other drivers of liquidity risk are medium. • Funding • The risk from the bank's funding profile and its sustainability is medium. • The risk from the stability of funding is medium. • Other drivers of funding risk are medium. 	H	<ul style="list-style-type: none"> • Liquidity • Mismatches imply high risk. • The risk from the size and composition of the liquidity buffer is high. • Other drivers of liquidity risk are high. • Funding • The risk from the bank's funding profile and its sustainability is medium. • The risk from the stability of funding is medium. • Other drivers of funding risk are medium.

8.4.7 Considerations for Adequate Management and Controls

123. The assessment of the adequacy of management and controls in relation to liquidity and funding risk should take into account the following:

- a. The consistency between the bank's liquidity and funding risk policy and strategy and its overall strategy and risk appetite.
- b. The robustness of the organizational framework for management of liquidity risk.
- c. The appropriateness of the liquidity and funding risk measurement, monitoring and reporting systems.
- d. The appropriateness of the internal limits and the control framework for liquidity and funding risk.

8.4.8 Liquidity Risk Management Framework

124. The following table sets out the high level expectation in relation to the bank's liquidity risk management framework. The provisions set out below should, together with the criteria set out above, form the basis for the assessment of the quality of the bank's controls and governance in relation to management of liquidity risk.

Table 18: Liquidity risk management framework

Liquidity Risk Management Framework

a) Introduction

The purpose of liquidity management should be to ensure that the bank is able to fully meet its financial commitments as they fall due.

b) Sources of Liquidity

Managing liquidity risk should involve: (i) understanding of the characteristics and related risks of different sources of liquidity, (ii) determining the appropriate funding strategies, including the mix of funding sources, to meet liquidity needs, and (iii) deploying the appropriate liquidity management strategies in a cost effective manner.

c) Asset Liquidity

Banks should establish clear strategies for managing asset liquidity aimed at: (i) reducing the potential for a mismatch between anticipated inflows and outflows, (ii) managing concentrations within the asset portfolio.

d) Liability Liquidity

Banks should also develop a liability funding strategy that is appropriate to the complexity of their activities. In particular, banks should be able to identify the characteristics, risks and trends of different funding sources.

e) Off-balance Sheet Items

Banks should be able to estimate and incorporate in their cash-flow projections the amount and timing of unused commitments. The estimation of such cash flows should take into account the nature of individual transactions and market conditions.

f) Board and Senior Management Oversight

The prerequisite of an effective liquidity risk management includes a well-informed Board, capable management and staff having relevant expertise, and efficient systems and procedures. The Board should ensure that the institution has necessary liquidity risk management framework

Liquidity Risk Management Framework

and is capable of managing the impact of severe but plausible liquidity scenarios. The Board should also be responsible for the approval of the strategy and significant policies related to overall management of liquidity.

The Board should also: (i) provide guidance on the appetite and tolerance for liquidity risk, (ii) establish an appropriate organization structure for the management of liquidity risk, (iii) ensure that senior management takes necessary steps to identify, measure, monitor and control liquidity risk, and (iv) review adequacy of the banks liquidity contingency plan.

g) Specific Responsibilities of Senior Management

The senior management should be responsible for the implementation of sound policies and procedures which takes into account the strategic direction and risk appetite that has been set by Board.

The senior management should, in particular: (i) develop and implement appropriate procedures, practices and standards that are well understood and consistent with the bank's strategies, (ii) adhere to the lines of authority and responsibility that the Board has established for managing liquidity risk, (iii) oversee the implementation and maintenance of management information and other systems that identify, measure, monitor, and control the banking institution's liquidity risk, and (iv) establish effective internal controls over the liquidity risk management process and ensure that the same is communicated to all staff.

The responsibility for managing the overall liquidity of the bank should be delegated to a specific, identified group within the bank, which could be in form of an Asset Liability Committee (ALCO). The effective management of assets and liabilities should incorporate the following activities: (i) assessment of current balance sheet position, (ii) projection of external factors likely to have an impact on the bank's liquidity position, (iii) development of assets and liability strategy, (iv) simulation of alternative strategies and selection of the most appropriate strategy, (v) setting of targets and communication of those targets to appropriate staff, and (vi) monitoring and reviewing performance.

h) Liquidity Risk Management Strategy, Policies and Procedures

Banks should formulate liquidity management policies which should be regularly reviewed. The policies should be properly and comprehensively documented and reviewed regularly by the Board of Directors to ensure that they remain relevant given the prevailing market conditions including any regulatory changes.

The liquidity risk management strategy should articulate: (i) the mix of assets and liabilities to maintain appropriate liquidity levels, (ii) guidance and targets in relation to diversification and stability of liabilities, and (iii) approach to management of liquidity in difference currencies, (iv) how to deal with liquidity disruptions including those resulting from limited access to inter-bank market which could be the case under stressed market conditions. The liquidity strategy should

Liquidity Risk Management Framework

be documented in a liquidity policy, and communicated throughout the bank. It should also be subject to periodical reviews to ensure that it remains valid.

i) Structure for Managing Liquidity

Banks should have a management structure in place to effectively execute the liquidity management strategy, policies and procedures. The responsibility for managing the overall liquidity of the bank should be placed with a specific, identified group within the bank e.g., Asset Liability Committee (ALCO). The ALCO or other committee responsible for the management of liquidity risk should be appropriately constituted.

j) Measuring and monitoring funding Requirements

Banks should comply with the relevant regulatory liquidity requirements and should be able to project future funding needs under different scenarios and time horizons. Banks should also establish a process for: (i) the ongoing measurement and monitoring of funding requirements, and (ii) monitoring of the external operating environment.

k) Management Information Systems

All banks should have robust information systems for identifying, measuring, monitoring, controlling and reporting of liquidity risk under normal and stressed market conditions. The management report should particularly be accurate and be provided to management on a timely basis. The management information packs should capture all significant sources of liquidity risk, including those associated with new products and business initiatives, and should facilitate the evaluation of the effect of different sources of liquidity risk on the bank's cash flows and liquidity ratios.

The content and format of management information reports should depend on the bank's liquidity management practices and the nature and complexity of its business. The reports should, amongst others, enable management to review and monitor: (i) the maturity profiles of a bank's cash flows under normal and stress scenarios, (ii) stock of liquid assets available and their market values, and (iii) concentration in sources and application.

l) Internal Controls

Banks should have in place an adequate system of internal controls over its liquidity risk management process. The controls should be subject to regular independent reviews and evaluations for effectiveness. The system of internal control for liquidity risk should include: (i) strong internal control environment, (ii) adequate process for the identification, measurement, monitoring and control of liquidity risk, (iii) internal control process such as policies and procedures, and (iv) adequate information systems. There should also be a continuous review of adherence to established policies and procedures.

Liquidity Risk Management Framework

m) Independent Reviews and Audits

Banks should conduct periodic independent reviews of their liquidity risk management process to ensure its integrity, accuracy and reasonableness. The reviews should, among other things, cover assessment of: (i) the adequacy of internal control systems and procedures for the identification, measurement, monitoring and control of liquidity risk, (ii) suitability of the underlying assumptions and scenario for cash flow projection, and (iii) adherence to established liquidity policies and procedures. The bank should also have in place a process aimed at ensuring that any identified weaknesses in the review process are addressed in a timely and effective manner.

n) Liquidity Contingency Plan

Banks should formulate a formal liquidity contingency plan that sets out a strategy for dealing with a liquidity crisis and the procedures for managing cash flow deficits in emergency situations. Banks should test, on a regular basis, its ability to access the funds under both normal and stressed market conditions. Banks should also identify the events that should trigger the contingency plan and should put in place mechanisms to facilitate monitoring of these trigger events.

Further, banks should ensure that the liquidity contingency plans remain robust over time and should conduct simulation of the contingency plan from time to time to prepare themselves for unfavorable situations. The liquidity contingency plan should also include provisions on how manage external stakeholders such as the media in the event of negative information. The contingency plan should also be regularly updated, reviewed and tested.

o) Stress testing and Scenario Analysis

Banks should conduct regular stress tests on their liquidity positions for all major currencies to ensure that they have adequate liquidity to withstand stressed market conditions. The selected scenarios should be of appropriately severity, and should include institution specific and general market crisis scenarios. The bank should have a process in place aimed at linking the outcome of its liquidity stress testing exercise with the potential management action to be activated in the event of crystallization of the stress scenario resulting in a liquidity distress.

p) Diversification and Stability of Liabilities

Banks should seek to maintain diversified and stable funding sources by ensuring appropriate mix of liabilities. This should include the establishment of concentration limits and a system for monitoring compliance with the set concentration limits. The assessment of the degree of liability concentration should take into consideration: (i) maturity profile and credit-sensitivity of the liabilities, (ii) mix of secured and unsecured funding, and (iii) the extent of reliance on a single liability provider or a related group of funding sources.

Liquidity Risk Management Framework

q) Access to Interbank and other Wholesale Markets

Banks should have a process in place for the assessment of their borrowing capacity based on past experience and under different scenarios, and for testing their ability to access funding in the market on regular basis.

r) Foreign Currency Liquidity Management

Banks should have in place a risk management system for the identification, measurement, monitoring and control of its liquidity positions in major currencies in which it is active. It should also have a process for: (i) assessing its aggregate foreign currency liquidity needs and the acceptable mismatch in combination with its domestic currency commitments, and (ii) undertaking separate analysis of its strategy for each individual currency.

s) Early Warning Indicators

Banks should implement a system of Early Warning Indicators (EWI) aimed at assessing the development of potential liquidity problem. The indicators could, potentially, include: (i) deterioration in asset quality, (ii) excessive concentrations on certain assets and funding sources, (iii) declining earnings and margins, (iii) increase in funding costs, (iv) rapid asset growth funded by volatile wholesale liabilities, (v) worsening cash-flow positions as evidenced by widening negative maturity mismatches, especially in the short-term time bands, and (vi) increase in borrowings from interbank market.

8.5 Interest Rate Risk in the Banking Book

8.5.1 Key Considerations

125. The assessment of Interest Rate Risk in the Banking Book (IRRBB) should capture the following sub-categories of interest rate risk, where applicable:
- a. **Re- pricing risk:** This is the risks related to the timing mismatch in the maturity and re-pricing of assets, liabilities and off-balance sheet positions.
 - b. **Yield curve risk:** This is the risk arising from changes in the slope and shape of the yield curve.
 - c. **Basis risk:** This is the risk arising from hedging exposure to one interest rate with exposure to a rate that re-prices under slightly different conditions.
 - d. **Optionality risk:** This is the risks arising from options, including embedded options inherent in the deposits without defined maturity.

126. The assessment of IRRBB should take into account the expectation of the BCP in relation to IRRBB as set out in the table below and the Basel Principles for the Management and Supervision of Interest Rate Risk (July 2004).

Table 19: Basel Core on Interest Rate Risk in the Banking Book

Basel Core Principle 23: Interest Rate Risk in the Banking Book
The supervisor determines that banks have adequate systems to identify, measure, evaluate, monitor, report and control or mitigate interest rate risk in the banking book on a timely basis. These systems take into account the bank's risk appetite, risk profile and market and macro-economic conditions.
EC 1: The supervisor require banks to have an appropriate interest rate risk strategy and interest rate risk management framework that provides a comprehensive bank-wide view of interest rate risk. This includes policies and processes to identify, measure, evaluate, monitor, report and control or mitigate material sources of interest rate risk. The supervisor determines that the bank's strategy, policies and processes are consistent with the risk appetite, risk profile and systemic importance of the bank, take into account market and macroeconomic conditions, and are regularly reviewed and appropriately adjusted, where necessary, with the bank's changing risk profile and market developments.
EC 3: The supervisor determines that banks' policies and processes establish an appropriate and properly controlled interest rate risk environment.
EC 4: The supervisor requires banks to include appropriate scenarios into their stress testing programmes to measure their vulnerability to loss under adverse interest rate movements.

8.5.2 Assessment of inherent IRRBB

127. The assessment of inherent IRRBB should involve the following three steps: (a) preliminary assessment, (b) assessment of the nature and composition of the bank's interest rate risk profile; and (c) assessment of the outcome of the scenario analysis and stress testing.

128. Preliminary assessment: This involves the identification of the sources of IRRBB to which the bank is or might be exposed. Particular consideration should be given to: (a) overall governance of interest rate risk, (b) the sensitivity of the bank's earnings to changes in interest rates, (c) any significant changes in the bank's IRRBB strategy, policy and limit sizes, and their potential impact on the bank's overall risk profile, and (d) IRRBB related significant market trends.

129. Nature and composition of the bank's interest rate risk profile: This assessment should be aimed at forming a view on the extent and likelihood of impact of changes in interest rates to the earnings and economic value of the relevant bank. In the analysis, particular consideration should be given to: (a) positions in the bank's banking book, (b) deposits without defined maturity, and (c) the bank's hedging strategy. The assessment of the interest rate risk profile should also take into account the results of the bank's internal measurement methodologies for interest rate risk.
130. Scenario analysis and stress testing: The assessment of the nature of interest rate risk should also, where relevant, take into account the results of the bank's internal scenario analysis and stress testing.

8.5.3 Assessment of IRRBB management and controls

131. The assessment of management and control of IRRBB should take into consideration the banks: (a) interest rate risk strategy and appetite, (b) organisational framework for management of interest rate risk, (c) interest rate risk related policies and procedures, (d) framework for identification, measurement, monitoring and reporting of interest rate risk, and, (e) general internal control framework.
132. The assessment of the interest rate risk strategy should be aimed at ensuring that the bank has: comprehensive, clear, documented and board approved IRRBB strategy.
133. The assessment of the organisational framework for management of IRRBB should take into consideration: (a) the lines of responsibility for taking, monitoring, mitigating and reporting of IRRBB, (b) level of independent testing of the effectiveness of the relevant internal controls, and (c) the quality and adequacy of resources for the management of interest rate risk.
134. The assessment of the quality of policies and procedures for the management of IRRBB should be aimed at evaluating: (a) whether the adopted policies have been approved by the board, and that they are reviewed and updated on a periodical basis, (b) the role of senior management in the development and implementation of policies and procedures, and (c) whether the adopted policies take into account all the relevant considerations, e.g., new product development or risk management activities.
135. The assessment of the approach to identification, measurement, monitoring and reporting of IRRBB should involve the evaluation of: (a) whether the adopted techniques capture all sources of interest rate risk, (b) the adequacy of staff and methodologies for measurement of IRRBB, (c) the prudence of behavioural assumptions (if any), (d) the quality and timeliness of risk management information

provided to the senior management, and (f) senior management understanding of the assumptions underlying the adopted risk measurement methodologies. The assessment should also consider whether the bank has implemented appropriate stress testing programme aimed at identification of the bank's specific interest rate risk vulnerabilities and as a complement to the adopted risk measurement techniques. Consideration should also be given to the appropriateness of the monitoring and reporting framework including Early Warning Indicators (EWI).

136. The assessment of the internal control framework should take into account: (a) the overall scope of the bank control function, (b) the quality of internal controls for the management of IRRBB including limit system, and (c) controls in place aimed at ensuring that breaches of the set limits and exception to the policies and procedures are appropriately reported. The assessment of internal control framework should also involve the review the effectiveness of the IAF and particularly the frequency and scope of the review of IRRBB management framework.

8.5.4 Scoring of the inherent IRRBB

137. As per the key considerations set out above, inherent IRRBB should be scored on a four point scale as per the summary criteria set out in the table below. The final rating should also be subject to a rigorous internal challenge at various levels within the regulatory body. The rationale for the final risk and internal control score should also be documented.

Table 20: Consideration for assigning a score to IRRBB

Risk Rating	Considerations	Risk Rating	Considerations
L	<ul style="list-style-type: none"> • The sensitivity of the economic value to changes in interest rates is not material. • The sensitivity of earnings to changes in interest rates is not material. • The sensitivity of the economic value and earnings to changes in the underlying assumptions is not material. 	MH	<ul style="list-style-type: none"> • The sensitivity of the economic value to changes in interest rates is medium. • The sensitivity of earnings to changes in interest rates is medium. • The sensitivity of the economic value and earnings to changes in the underlying assumptions is medium.
ML	<ul style="list-style-type: none"> • The sensitivity of the economic value to changes in interest rates is low. • The sensitivity of earnings to changes in interest rates is low. • The sensitivity of the economic value and earnings to changes in the underlying assumptions is low. 	H	<ul style="list-style-type: none"> • The sensitivity of the economic value to changes in interest rates is high. • The sensitivity of earnings to changes in interest rates is high. • The sensitivity of the economic value and earnings to changes in the underlying assumptions is high.

8.5.5 Considerations for adequate management and controls

138. The assessment and scoring of the quality of management and controls in IRRBB should, in particular, take into consideration the following:

- a. The consistency between the bank's interest rate risk policy and strategy, and its overall risk strategy and risk appetite.
- b. The robustness of the bank's organisational framework for management and control of interest rate risk.
- c. The appropriateness of the bank's approach to measurement, monitoring and reporting systems of interest rate risk.
- d. The consistency between the internal limits system and the control framework for interest rate risk and the banks risk strategy and risk appetite.

8.5.6 Interest rate risk management framework

139. The following table sets out the high level expectation in relation to the bank's interest rate risk management framework. The provisions set out below, together with the criteria set out above, should form the basis for the assessment of the quality of the bank's controls and governance in relation to management of interest rate risk.

Table 21: Interest rate risk management framework

Interest Rate Risk Management Framework

a) Introduction

Banks should establish and implement a comprehensive interest rate risk management process which results in effective identification, measurement, monitoring, and control of interest rate risk exposures. The interest rate risk management framework should, in particular, be in line with the bank's risk profile and risk appetite.

b) Board and Senior Management Oversight

The Board of directors should have the ultimate responsibility for understanding the nature and the level of interest rate risk taken by the financial institution. In particular, the Board should be responsible for the: (i) approval of the strategies and policies governing the interest rate risk of the bank, (ii) review of the overall objectives of the bank with respect to interest rate risk, (iii) setting of the risk appetite for interest rate risk, and (iv) establishment of the organisational structure for the management of interest rate risk exposures.

The Board should also periodically: (i) assess the performance of senior management in monitoring and controlling of interest rate risk, and (ii) re-evaluates interest rate risk management policies as well as overall business strategies that affect the interest rate risk exposure of the bank.

c) Responsibilities of senior management

The bank's senior management should: (i) develop policies and procedures for managing interest rate, (ii) maintain appropriate limits on taking of interest rate risk, (iii) implement a process for measuring interest rate risk and valuation of interest rate sensitive positions, (iii) establish appropriate organisational structure for management of interest rate risk, (iv) ensure the appropriateness of interest rate risk reports that are circulated to senior management and the Board to facilitate the oversight of the interest rate risk. They should also establish and implement effective internal controls, and put in place a process aimed at ensuring that the adopted policies and procedures for management of interest rate risk are periodically reviewed to ensure that they remain appropriate.

Interest Rate Risk Management Framework

d) Policies, Procedures and Risk Limits

The adopted policies for management of interest rate risk should specifically describe authorized instruments and activities. The bank should also have a documented risk limit system in relation to interest rate risk, which should take into consideration the bank's complexity and capital position.

The management should have in place a process aimed at maintaining interest rate risk exposure within the established limits. There should also be appropriate internal controls aimed at ensuring that prompt action is taken in relation to limit breaches, and that there is an appropriate escalation process in relation any exception to the established policies or approved limits.

e) MIS for Risk Identification and Measurement, Monitoring and Reporting

Banks should maintain systems that concisely report interest rate risk, and senior management and the board should review the interest rate risk reports. The interest rate risk reports should be at sufficient level of detail to permit management and the board to verify compliance with policies and risk limits. It should also enable the management and the Board to evaluate key assumptions including: interest rate forecasts, behavioural assumptions in relation to deposits without defined maturity, and loan repayments.

The reporting of interest rate risk measures and metrics should be regular and should include: (i) comparison between the current exposure and the set limits, and (ii) comparison between past forecast and actual results. The interest rate risk reports should, in particular, be comprehensive and take into account the bank's interest rate risk profile. The report should capture the following, amongst others: (i) summary of the bank's aggregate interest rate exposures (ii) attestation of compliance with adopted policies and limits, (iii) key behavioural assumptions in relation to assets and liabilities without defined maturities, (iv) results of bank's internal stress tests based on appropriate scenarios, and (v) summary of the findings from the reviews of interest rate risk policies, procedures, and the adequacy of the interest rate risk measurement systems.

f) Internal Controls and Audit Reviews

Banks should have adequate internal controls aimed at ensuring the integrity of the interest rate risk management process. The internal controls should, in particular, promote: effective and efficient operations, reliable financial and regulatory reporting, and compliance with relevant laws, regulations and institutional policies.

The implemented controls should be aimed at ensuring that: (i) there is an adequate process for identification and evaluation of interest rate risk, (ii) there are adequate control in form of policies, procedures and methodologies, and (iii) there is an effective management information system.

Interest Rate Risk Management Framework

The bank's processes and procedures for measurement, monitoring and control of interest rate risk should be independently reviewed on a regular basis to ensure that the risk measurement system sufficiently capture all the material elements of interest rate risk, and that the interest rate risk management framework is appropriate and well implemented.

g) Stress-testing

Banks should carry out stress testing to assess the impact of changes in interest rate on earnings and capital. The adopted stress testing methodology should facilitate identification of the bank's specific interest rate risk vulnerabilities and the outcome of the stress test should feed into the establishment and review of policies and limits for interest rate risk.

The bank's management body should also periodically review both the design and the results of the interest rate risk stress tests, and ensure that appropriate contingency plans are in place.

8.6 Capital Risk

8.6.1 Key Considerations

- I40. The assessment of the level of capital risk inherent in a bank should take into account:
- (a) the current and projected excess capital margin, which is the difference between the available financial resources and the minimum capital requirement based on the relevant capital framework that has been implemented by the supervisory body, e.g. Basel Capital Framework
 - (b) the structural risks arising as a result of the organization structure of the bank and intra group activities, and
 - (c) overall capital planning process including the quality of the stress testing processes and procedures.
- I41. The excess capital margin is the positive gap between the bank's own funds eligible for capital requirements and the estimated minimum regulatory capital requirements taking into account the prevailing regulatory regime, e.g., Basel Capital Framework. In particular, the estimated capital requirements should take into account all the material risks facing the financial institutions.
- I42. Where the Basel II Capital Framework has been implemented the minimum capital requirements that feeds into estimation of the excess capital margin should be the sum of Pillar 1 requirements (credit, market and operational risks) and Pillar 2 add-on including those set aside, where relevant, to cover: credit concentration and Interest Rate Risk in the Banking Book (IRRBB).
- I43. The estimation of own funds should also take into account the prevailing regulatory regime and particular adjustment should be made for items, which though forming

part of equity for financial accounting purposes under the International Financial Reporting Standards (IFRS), may not be available during stress market conditions to cushion against the impact of crystallization of credit, operational or market risk related losses.

144. The assessment of structural risk should take into account the additional risk that could arise as a result of the regulated bank being part of a wider cross border banking group or a financial conglomerate operating within the various subsectors e.g., banking, insurance, investment management, etc. This includes the risk arising as a result of: intra group lending, potential financial contagion across related entities or regulatory arbitrage. Further, assessment should take into account the potential likelihood and extent of parental support in the event of a capital shortfall or financial distress. This should include consideration of the materiality of the subsidiary to the overall banking group. The systemic importance of the banking group to the domestic economy where the parent is domiciled should also be taken into consideration.
145. The assessment of the quality of the capital planning process should take into account the four fundamental components of a sound capital planning process as provided by the BCBS in the principle paper “A sound capital planning process: fundamental elements, January 2014”. This includes special consideration of: (a) internal control and governance, (b) capital policy and risk capture, (c) forward-looking view, and (d) management framework for preserving capital.

8.6.2 Excess Capital Margin

146. The assessment of the excess margin should take into account: (a) the absolute and relative level of the excess margin at a point-in-time (PiT) and over the capital planning horizon, (b) the historical volatility of capital requirements and excess margin over the business cycle, and the potential impact of the volatility of the capital margin on the solvency position of the bank, (c) the composition and quality of the bank’s eligible capital resources, and (d) the sensitivity of the excess margin to stress test shocks and potential changes in the economic environment.
147. Consideration should also be given to the available potential additional cushion to cover against the impact of crystallization of losses in form of general loan loss reserves and other general reserves. The bank’s earning potential should also be taken into account as this is one of the potential lines of defence against the impact of crystallization of losses. The assessment of quality of earning should, amongst others, take into account their volatility and the diversity of income stream.
148. The nature and the extent of risk types not directly captured or not adequately considered in the calculation of the regulatory solvency or capital ratio should

also be considered. In particular, where the Basel II Capital Framework has been implemented, considerations should be given to those risks that are not fully considered under the Pillar I framework, e.g. credit concentration risk, IRRBB, business risk, strategic risk, etc.

149. The other factors that could affect the level of excess margin and which should also be taken into account includes the bank's documented dividend policy, and the risk of a significant FX or MtM losses.
150. The assessment of the ability of the bank to raise or access additional capital in the event of a shortfall or distress should, where relevant, take into account: (a) whether the bank or its parent is listed in the stock market and the level of activity in the stock market where the bank or its parent is listed, (b) whether the bank has previously accessed capital from the capital markets and the level of support that the previous issues of shares or debt by the bank received, (c) the capital position of the bank's parent where the bank is a subsidiary, and whether there are any capital transfer restrictions between the parent and its subsidiaries or across the jurisdictions where the parent and the subsidiaries are based, and (d) the potential impact of stressed market conditions on the bank's overall ability to raise or access additional capital requirements.

8.6.3 Structural Risk

151. The assessment of structural risk should take into account: (a) the level and direction of intra group transactions, and whether they pose any significant risk to the solvency position of the regulated bank, (b) potential impediment to free transfer of capital between different entities within the banking group including, where relevant, regulatory capital transfer restrictions and FX controls.
152. The risk arising from cross-border transactions and the potential for ring-fencing of entities within the group by their domestic regulators and its implication of potential ring-fencing from a prudential perspective of the relevant entity should also be assessed.
153. Further, the potential for parental support including the strength of any guarantees or letters of comfort should also be assessed. This should include consideration of the materiality of the relevant banking entity to the overall banking group and the systemic importance of the parent entity to the domestic economy of the country in which it is domiciled.

8.6.4 Capital Planning

154. The assessment of the capital planning processes should be aimed at forming a view on: (a) the plausibility of the capital plan given the market forces, bank's internal capacity, historical performance and the supervisory view or opinion, (b) effectiveness and comprehensiveness of the bank's strategies and processes for the assessment and maintenance on an ongoing basis of the amounts, type and distribution of internal capital that they consider adequate to cover the nature and the level of risks to which they are or might be exposed.
155. The assessment should take into account the expectation of the BCBS principles on sound stress testing and on sound capital planning process. The assessment of the capital planning process, in particular, should take into account the four fundamental components of a sound capital planning process which includes: (a) internal control and governance, (b) capital policy and risk capture, (c) forward-looking view, and (d) management framework for preserving capital.
156. The assessment of the internal controls and governance of capital planning should be aimed at evaluating whether the bank's process produces an internally coherent view of its current and future capital needs. The assessment criteria should include:
- a. Whether the capital planning process reflects the input of different experts from across the bank, including but not limited to staff from business, risk, finance and treasury departments.
 - b. Whether there is an appropriate link between the capital planning, budgeting and strategic planning process within the bank.
 - c. Whether the capital plan and underlying process and models are subject to regular independent validation with the aim of ensuring that the processes are strong, are applied consistently and remain relevant for the bank's business model and risk profile.
 - d. Involvement of senior management and the board of directors in the capital planning process. This includes the quality and frequency of the review of the capital plans by the board of directors or relevant committees.
157. The focus of the assessment of the capital policy and risk capture is on the capital policy document and related processes. Specifically, a capital policy is a written document agreed by the senior management of a bank which specifies the principles that management should follow in making decisions about how to deploy the bank's capital. The assessment criteria should include whether:

- a. The capital policy includes details of the range of strategies that management can deploy to address both anticipated and unexpected capital shortfalls.
- b. A suite of capital and performance related metrics against which management monitors the bank's conditions have been clearly articulated within the capital policy.
- c. There is an appropriate process for monitoring capital related triggers and limits. There is a proper process for the formulation, approval and review of capital targets and whether the set capital targets appropriately informs the bank's business strategy and overall capital management processes.

158. Another key element of a sound capital planning process is stress testing or scenario analyses, which helps in forming a forward-looking view on the capital position of the bank. The assessment of the forward-looking view should be aimed evaluating whether stress testing is integral to the bank's capital planning process and whether the adopted stress test scenarios captures all the material risks inherent in the bank. Further, the assessment of the forward-looking element should take into account senior management awareness of the assumptions around the potential management actions.

159. The management framework for preserving capital should also be assessed taking into consideration: (a) the appropriateness of the capital monitoring and escalation procedures, (b) the quality of risk reporting and stress testing framework, and (c) the process for prioritization and quantification of the capital actions available to cushion against unexpected events.

8.6.5 Stress Testing Framework

160. The areas of focus in the assessment of bank stress testing process should include: (a) governance of the end-to-end stress testing process, (b) scenario formulation and selection, (c) scenario translation process including where applicable the quality of the quantitative translation models, (d) quantification of impact of stress test shock on own funds for solvency purpose, profit and loss, regulatory capital requirements or economic capital, (e) use of output to inform decision making, and (f) the frequency, scope and depth of independent review and validation of the stress testing processes and methodologies.

161. The assessment of the bank's stress testing framework should take into consideration the expectation of the BCBS Principles for sound stress testing practice and supervision (May 2009) and particularly whether:

- a. Stress testing forms an integral part of the overall governance and risk management culture of the bank and is actionable with the results of the stress testing analyses

impacting decision making at the appropriate management level, including strategic business decisions of the board and senior management.

- b. The bank operate a stress testing programme that promotes risk identification and control, provide a complementary risk perspective to other risk management tools; improves capital and liquidity management; and enhances internal and external communication. This includes whether stress testing form an integral part of the ICAAP.
- c. Stress testing programmes take into account view from across the organization and cover a range of perspectives and techniques.
- d. The bank has written policies and procedures aimed at governing the stress testing programme, and whether the operation of the programme is appropriately documented including details of the frequency of the stress testing, and the methodological details of each component.
- e. The bank has a suitably robust infrastructure in place, which is sufficiently flexible to accommodate different and possibly changing stress tests at an appropriate level of granularity.
- f. The bank regularly reviews and updates its stress testing framework, and particularly whether the effectiveness of the stress testing framework, as well as the robustness of major individual components is assessed regularly and independently.
- g. Stress testing exercise cover appropriate range of risks and business areas, including at the firm-wide level.
- h. Stress testing programmes cover a range of scenarios, including forward looking scenarios, and consideration of system-wide interactions and feedback effects.
- i. Stress tests feature a range of severities including events capable of generating the most damage to the bank whether through size of loss or through loss of reputation, i.e., Reverse Stress Testing (RST).
- j. Whether, as part of the overall stress testing programme, the bank take account of simultaneous pressure in funding and asset markets, and the impact of a reduction in market liquidity on exposure valuation.
- k. The effectiveness of the risk mitigating techniques is systematically challenged.
- l. Results of the stress testing feed into decision making at the appropriate senior management level.

8.6.6 Scoring of inherent capital risk

162. As per the key considerations set out above, inherent capital risk should be scored on a four point scale as per the summary criteria set out in the table below. The final rating should also be subject to a rigorous internal challenge at various levels within the regulatory body. The rationale for the final risk and internal control score should also be well documented.

Table 22: Scoring of inherent capital risk

Risk Rating	Consideration for inherent risk	Risk Rating	Consideration for inherent risk
L	<ul style="list-style-type: none"> • The bank holds a level of own funds comfortably above the total minimum capital requirements and is expected to do so in the future. • Stress-testing does not reveal any discernible risk regarding the impact of a severe but plausible economic down turn on own funds. • The free flow of capital between entities in the group, where relevant, is not restricted, or all entities are well capitalized above the set minimum supervisory requirements. • The bank has a credible capital plan that has the potential to be effective if required. • The bank's leverage ratio is comfortably above any regulatory minimum and there is no discernible risk of excessive leverage. 	MH	<ul style="list-style-type: none"> • The bank issuing some of its capital buffers. There is potential for the institution to breach the regulatory set minimum capital requirements if the situation deteriorates. • Stress-testing reveals a medium level of risk regarding the impact of a severe but plausible economic downturn on own funds. Management actions may not credibly address this. • The free flow of capital between entities in the group, where relevant, is impeded or restricted. • The bank has a capital plan that is unlikely to be effective. • The bank's leverage ratio is above any regulatory minimum, but stress testing reveals concerns about the impact of a severe but plausible economic downturn on the ratio. There is a medium level of risk of excessive leverage.

Risk Rating	Consideration for inherent risk	Risk Rating	Consideration for inherent risk
ML	<ul style="list-style-type: none"> The bank is close to breaching some of its capital buffers but is still clearly above the minimum regulatory set capital requirements. Stress-testing reveals a low level of risk regarding the impact of a severe but plausible economic down turns on own funds, but management actions to address this seem credible. The free flow of capital between entities in the group, where relevant, is or could be marginally restricted. The bank has a plausible and credible capital plan that, although not without risk, has the potential to be effective if required. The bank's leverage ratio is above any regulatory minimum. There is a low level of risk of excessive leverage. 	H	<ul style="list-style-type: none"> The bank is near to breaching the regulatory set minimum capital requirements. Stress-testing reveals that the regulatory set minimum capital requirements would be breached near the beginning of a severe but plausible economic down turn. Management actions will not credibly address this. The free flow of capital between entities in the group, where relevant, is impeded. The bank has no capital plan, or one that is manifestly inadequate. The bank's leverage ratio is near to breaching any regulatory minimum. There is a high level of risk of excessive leverage.

8.7 Macro prudential Considerations

163. The key consideration in the assessment of environmental risk includes the current and potential changes in the following and the likely impact on the specific bank and the banking sector in general: (a) regulatory and legal environment, (b) macroeconomic environment, (c) political and social environment, and (d) technology. Consideration should also be given to the ability of the bank to respond appropriately to the changes in the environment in which it is operating in.
164. The regulatory and legal consideration includes the assessment of the impact of current and potential changes in: (a) regulatory environment and the level of supervisory scrutiny, (b) consumer law, and (c) antitrust legislation.
165. The key consideration in the assessment of the macroeconomic environment includes the potential impact of changes in the following on the financial position of an individual bank and the overall banking system: (a) economic growth, (b) interest rates, (c) asset prices, and (e) inflation rate, and (d) employment rate. Consideration should, in particular, be given to the historical movements in the macroeconomic factors, and the sensitivity of the individual banks and the banking system to forecasted macroeconomic factors taking into account plausible scenarios.

166. The political consideration that should be taken into account includes: (a) potential changes in tax policy, (b) potential trade restrictions, and (c) the risk of political instability. The risk of expropriation of a bank's assets should also be considered, particularly in relation to foreign subsidiaries and branches. The social consideration should include assessment of the impact of social trends, which are likely to result in adverse impact on the demand of the bank's services and subsequently its profitability.
167. The consideration in relation to the technological environment potentially include assessment of the likely impact of new electronic platforms that provides competition to the tradition banks, and in particular the mobile phone service providers who are also providing financial services such as fund transfer, lending and saving facilities.
168. The banking supervisor should consider implementing appropriate process aimed at ensuring that there is proper monitoring of key changes in the macro-economic environment. This could include a macroeconomic research function aimed at monitoring the key environmental changes and the likely impact of those changes on the banking system. This should,, in particular, be supported by adequate statistical analysis and data management capability aimed at identifying trends, breaking-points or shifts, changes in relationships or correlations, build-up of concentrations, and potential asset price bubbles.
169. The macroeconomic analysis should be broad and should cover all the material external factors having a direct or indirect impact on the performance of the banking system. Specific consideration should also be given to analysis and deeper understanding of potential channels of contagion. This could potential include: (a) analysis and tracking of bilateral inter-bank exposures including the potential failure of one banking institution on the overall banking system, (b) cross-border transactions including the direction of the exposure and any inherent currency risk and mismatches, (c) the nature of key collaterals and the potential risk of valuation not fully supported by the fundamentals, and (d) identification of emerging risk based on the key vulnerability of the banking system. The outcome of this analysis should, where relevant, be an annual macroeconomic risk survey
170. The overall RBS framework should focus on both the overall financial system (macro) and individual institutions (micro). The vulnerabilities that should be considered includes those related to: credit booms, household sector, corporate sector, systemic liquidity and currency risks and structural risks.
171. The Table below is a summary of the proposed key indicators and tools in relation to the above macro prudential vulnerabilities.

Table 23: Macro prudential Indicators and Tools

Vulnerability	Indicators	Tools
Credit Boom	<ul style="list-style-type: none"> • Growth in credit/GDP • Credit growth • Asset price deviations • DSTI • Leverage on loans at individual or sector level. 	<ul style="list-style-type: none"> • Countercyclical capital buffers (CCCBS) • Dynamic provision
Household sector	<ul style="list-style-type: none"> • House prices • Lending standards • LTV ratio • DSTI ratio • Share of FX loans 	<ul style="list-style-type: none"> • Sectoral capital requirements • Loan to value (LTV) ratios • Debt-service –to income (DSTI) ratios
Corporate Sector	<ul style="list-style-type: none"> • Increases in corporate leverage: DSTIs on commercial real estate loans, LTVs on commercial real estate loans • Lending to commercial real estate: share of FX loans • Foreign exchange lending to corporate sector 	<ul style="list-style-type: none"> • Sectoral capital requirements • Exposure caps • LTV limits
Systemic liquidity and currency risks.	<ul style="list-style-type: none"> • Increasing loan to deposit ratio (LTD) ratio • Increasing share of noncore funding to total liabilities • Decreasing share of liquid assets • Increasing gross capital inflows 	<ul style="list-style-type: none"> • Liquid asset buffers • Stable funding requirements • Limits on open currency position
Structural risk	<ul style="list-style-type: none"> • Inter-linkages within the financial system 	<ul style="list-style-type: none"> • Capital and liquidity surcharges for systemically important institutions • Measures to control inter-linkages in funding and derivative markets

172. The above indicators could also be complemented by the following set of encouraged financial soundness indicators

Table 24: Encourage set of financial soundness indicators

Other financial corporations	<ul style="list-style-type: none"> • Asset to total financial system assets • Assets to GDP
Nonfinancial corporations sector	<ul style="list-style-type: none"> • Total debt to equity • Return on equity • Earnings to interest and principal expenses • Net foreign exchange exposure to equity • Number of applications for protection from creditors
Households	<ul style="list-style-type: none"> • Household debt to GDP • Household debt service and principal payment to income
Market liquidity	<ul style="list-style-type: none"> • Average bid-ask spread in the securities market • Average daily turnover ratio in the securities market
Real estate markets	<ul style="list-style-type: none"> • Real estate prices • Residential real estate loans to total loans • Commercial real estate loans to total loans

9. INTERNAL GOVERNANCE AND CONTROLS

9.1 General Considerations

173. The focus of the assessment of the internal governance and internal control should be on the verification of their adequacy given the bank's risk profile, business model, size and complexity.
174. The assessment of internal governance and internal controls should include evaluation of the: (a) overall internal governance framework, (b) corporate and risk culture, (c) organisation and functioning of the board, (d) remuneration policies and practices, (e) risk management framework, (f) internal control framework including the operations of the Internal Audit Function, (g) information system infrastructure and control environment, and business continuity planning, and (h) recovery planning.
- a. Overall internal governance framework:** The assessment should take into account the: (a) structure and composition of the board, and the board and senior management committees, and, (b) policies aimed at identification and management of conflict of interest.
- b. Corporate and risk culture:** This should involve the assessment of the whether a bank has a robust corporate and risk management culture given its size and risk profile. This should take into account: (a) the role of the board in the management of the bank including strategy formulation, (b) the set governance principles, corporate values and standards, (c) the quality of internal challenge of decisions made and acceptance of divergent views, (d) approach to dissemination of strategies and policies to all the relevant staff members.
- c. Organisation and functioning of the management body:** This should include the assessment of: (a) the approach to setting, oversight and evaluation of the internal governance framework by the board, and (b) the quality of interaction between the management and the board.
- d. Composition and function of the Board:** The review of the composition and functioning of the board and its committees should be aimed at evaluating whether: (a) the size and composition of the board is appropriate, (b) there is demonstrable level of commitment and independence by the members of the board, (c) there is an appropriate process for ensuring that members of the board are assessed as fit and proper prior to their appointment and on an ongoing basis, (d) there as a process for assessing the effectiveness of the board on an ongoing basis, and (e) there is sufficient time allocated for the board to discuss and consider all the risk issues and that all the relevant information in the relation to the risk profile of the bank is provided to the Board.

- e. **Remuneration Policy:** The assessment of the remuneration policy should be aimed at ensuring that (a) the adopted remuneration policy is aligned with the risk profile is approved and monitored by the board, (b) the implemented compensation schemes is aligned with its risk appetite and long-term interest of the bank, and (c) the bank's remuneration policy does not incentivises excessive risk taking that could jeopardise the overall sustainability of the bank.
- f. **Risk management framework:** The assessment of risk management framework should be aimed at ensuring that the bank has implemented an appropriate risk management framework and should include an assessment of: (a) the risk strategy and risk appetite framework, (b) the internal process for assessing the adequacy of capital and liquidity.
- g. **Internal control framework:** This should involve the assessment of whether a bank has appropriate internal control framework and mechanism. This should include evaluation of: (a) the operation and effectiveness of the independent control functions, (b) the scope of the internal control framework, (c) the policies and procedures in place for the identification, measurement, management and reporting of risks, (d) role of the independent risk control function in the formulation of the risk strategy and the decisions around all the material risks, (e) whether the bank has Head of Risk or Chief Risk Officer(CRO) with sufficient mandate and who is independent from the risk taking functions, (f) the capacity of the bank to generate risk management reports that are accurate, comprehensive, clear and relevant.
- h. **Internal Audit Function (IAF):** The aim should be to ensure that a bank has established an effective and independent IAF and whether the adopted audit processes are aimed at ensuring (i) adequate coverage of all the necessary areas, and (ii) the effectiveness of the IAF in determining compliance with the approved internal policies and the relevant regulations.
- i. **Information systems and business continuity:** The assessment should be aimed at ensuring that a bank has effective and reliable information and communication systems that fully support risk data aggregation.
- j. **Recovery planning:** The objectives should be to identify the deficiencies in the recovery plan and the recovery planning process.

175. Consideration should also be given to the expectation of the Basel Core Principles for Banking Supervision and particularly the Principles set out in the table below:

*Table 25: Basel Core Principle on Governance, Risk Management and Internal Controls***Basel Core Principle 14: Corporate Governance:**

The supervisor determines that banks and banking groups have robust corporate governance policies and processes covering: strategic direction, group and organizational structure, control environment, responsibilities of the banks' Boards and senior management and compensation.

- EC2: The supervisor regularly assesses a bank's corporate governance policies and practices, and their implementation, and determines that the bank has robust corporate governance policies and processes commensurate with its risk profile and systemic importance.
- EC 3: The supervisor determines that governance structures and processes for nominating and appointing Board members are appropriate for the bank and across the banking group. Board membership includes experienced non-executive members, where appropriate. Commensurate with the risk profile and systemic importance.
- EC 4: Board members are suitably qualified, effective and exercise their "duty of care" and "duty of loyalty".
- EC 6: The supervisor determines that the bank's Board, except where required otherwise by laws or regulations, has established fit and proper standards in selecting senior management, maintains plans for succession, and actively and critically oversees senior management's execution of Board strategies, including monitoring senior management's performance against standards established for them.

Basel Core Principle 15: Risk Management Process

The supervisor determines that banks have a comprehensive risk management process to identify, measure, evaluate, monitor, report and control or mitigate all material risks on a timely basis and to assess the adequacy of their capital and liquidity in relation to their risk profile and market and macroeconomic conditions.

- EC1: The supervisor determines that banks have appropriate risk management strategies that have been approved by the banks' Boards and that the Boards set a suitable risk appetite to define the level of risk the banks are willing to assume or tolerate.
- EC 2: The supervisor requires banks to have comprehensive risk management policies and processes to identify, measure, evaluate, monitor, report and control or mitigate all material risks.
- EC 5: The supervisor determines that banks have an appropriate internal process for assessing their overall capital and liquidity adequacy in relation to their risk appetite and risk profile.
- EC 9: The supervisor determines that banks have risk management functions covering all material risks with sufficient resources, independence, authority and access to the banks' Boards to perform their duties effectively.
- EC13: The supervisor requires banks to have forward-looking stress testing programmes, commensurate with their risk profile and systemic importance, as an integral part of their risk management process.

Basel Core Principle 26: Internal Control and Audit

Requires supervisor to determine that banks have adequate internal control frameworks to establish and maintain a properly controlled operating environment for the conduct of their business taking into account their risk profile. These include clear arrangements for delegating authority and responsibility; separation of the functions that involve committing the bank, paying away its funds, and accounting for its assets and liabilities; reconciliation of these processes; safeguarding the bank's assets; and appropriate independent internal audit and compliance functions to test adherence to these controls as well as applicable laws and regulations.

- EC1: The supervisor requires banks to have internal control frameworks that are adequate to establish a properly controlled operating environment for the conduct of their business, taking into account their risk profile.

9.2 Scoring of Internal Governance and Controls

176. The regulatory authority should then form a view on the adequacy of the banks internal governance arrangements and internal controls based on the assessment above. The final score should be determined taking into account the following criteria.

Table 26: Consideration for assessing internal governance and controls

Low	Medium Low
<ul style="list-style-type: none"> • The bank has a robust and transparent organisational structure with clear responsibilities and separation of risk taking from risk management and control functions. • There is a sound corporate culture. • The composition and functioning of the Board is appropriate. • The remuneration policy is in line with risk strategy and long-term interests. • The risk management framework and risk management processes, including the ICAAP, ILAAP, stress testing framework, capital planning and liquidity planning, are appropriate. • The internal control framework and internal controls are appropriate. • The internal audit function is independent and operates effectively • Information systems and business continuity arrangements are appropriate. • The recovery plan is complete and credible and recovery planning arrangements are appropriate. 	<ul style="list-style-type: none"> • The bank has a largely robust and transparent organisational structure with clear responsibilities and separation of risk taking from risk management and control functions. • There is a largely sound corporate culture. • The composition and functioning of the management body are largely appropriate. • The remuneration policy is largely in line with risk strategy and long-term interests. • The risk management framework and risk management processes, including the ICAAP, ILAAP, stress testing framework, capital planning and liquidity planning, are largely appropriate. • The internal control framework and internal controls are largely appropriate. • The internal audit function is independent and its operations are largely effective. • Information systems and business continuity arrangements are largely appropriate. • The recovery plan is largely complete and largely credible. The recovery planning arrangements are largely appropriate.

Medium High	High
<ul style="list-style-type: none"> • The bank's organisational structure and responsibilities are not fully transparent and risk taking is not fully separated from risk management and control functions. • There are doubts about the appropriateness of the corporate culture. • There are doubts about the appropriateness of the composition and functioning of the management body. • There are concerns that the remuneration policy may conflict with risk strategy and long-term interests. • There are doubts about the appropriateness of the risk management framework and risk management processes, including the ICAAP, ILAAP, stress testing framework, capital planning and liquidity planning. • There are doubts about the appropriateness of the internal control framework and internal controls. • There are doubts about the independence and effective operation of the internal audit function. • There are doubts about the appropriateness of information systems and business continuity arrangements. • The recovery plan is incomplete and there are some doubts about its credibility. There are doubts about the appropriateness of arrangements for recovery planning. 	<ul style="list-style-type: none"> • The bank's organisational structure and responsibilities are not transparent and risk-taking is not separated from risk management and control functions. • The corporate culture is inappropriate. • The composition and functioning of the management body are inappropriate. • The remuneration policy conflicts with risk strategy and long-term interests. • The risk management framework and the risk management processes, including the ICAAP, ILAAP, stress-testing framework, capital planning and liquidity planning, are inappropriate. • The internal audit function is not independent and/or is not operating in accordance with established international standards and requirements; operations are not effective. • The internal control framework and internal controls are inappropriate • The information systems and business continuity arrangements are inappropriate. • The recovery plan is incomplete and unreliable. The recovery planning arrangements are inappropriate.

9.3 Basic Elements of Risk Management Framework

177. The following are the basis elements of a sound risk management system:

*Table 27: Basic elements of a sound risk management system***Basic elements of a sound risk management system**

The Risk Management Programme (RMP) of each bank should at a minimum contain the following elements:

a. Active Board and Senior Management Oversight

- The Board of Directors is ultimately responsible for determining the level of risk to be taken by the supervised financial institution (SFI). The Board should therefore be responsible for: the approval of the overall business strategies and significant policies of the organization and ensuring that senior management are fully capable of managing the activities that the bank. To fulfil this mandate, the board members should have an in-depth understanding of the risks significant to the bank. They should also ensure that the management has implemented an appropriate risk management framework.
- The level of technical knowledge required of directors may vary depending on the circumstances at each institution. The expectation, however, is for the Directors to take the necessary steps to develop an appropriate understanding of the risks inherent within the bank. They should also articulate the level of risk acceptable to their bank and take full responsibility for the implementation of the appropriate internal controls and procedures.
- Senior management are responsible for the implementation of strategies in with the aim of limiting the associated risks. They should therefore possess appropriate knowledge of all major business lines to ensure that appropriate policies, controls and risk monitoring systems are in place. Senior management is also responsible for setting the tone in relation to the internal control environment and corporate culture.

b. Adequate Policies, Procedures and Limits

- The bank's risk management policies and procedures should be tailored to the bank's risk profile. The implemented policies and procedures should, in particular, provide detailed guidance for the implementation of broad business strategies and should include limits and controls aimed at managing the level of risk. The policies and procedures should capture all the material risks and should be reviewed on a regular basis to ensure that are up-to-date and fit-for-purpose.

c. Adequate Risk Monitoring and Management Information Systems (MIS)

- The risk management framework should be supported by information systems that provide relevant and timely risk management and financial performance reports at various level of consolidation.
- The sophistication of risk monitoring and MIS take into account the complexity and size of the bank. The bank should, in particular, maintain a set of management and board reports to support risk-monitoring activities, and the comprehensiveness and appropriateness of these reports should be reviewed on a regular basis.

Basic elements of a sound risk management system

d. Adequate Internal Controls

- It is the management responsibility to establish and maintain an effective system of internal controls including appropriate segregation of duties.
- Internal controls should be periodically tested by an independent and suitably qualified Internal Audit Function (IAF)
- The results of audits or review should be adequately documented, and should stipulate management's responses to them. There should also be a process for direct reporting of findings to the Audit Committee.
- The bank should, on a regular basis, review its risk management programme to assess its adequacy given the changes in the operating environment.

The bank's risk management framework should, at a minimum, also include the following:

- a) **Risk Identification:** This should be a continuing process and there should be an attempt to ensure that all the risks are well understood at transactional and portfolio levels.
- b) **Risk Measurement:** Accurate and timely measurement of risk is essential to an effective risk management framework.
- c) **Risk Control:** The bank should establish and communicate appropriate controls in form of: risk limits, policies, standards and procedures.
- d) **Risk Monitoring:** The bank should also establish an MIS that accurately identifies and measures risks from the inception of transaction or activity. The adopted system should also have the capability of monitoring and flagging any significant changes in risk profiles.

10. OVERALL SCORE AND SUPERVISORY ENGAGEMENT MODEL

10.1 General Considerations

178. The aggregate risk score should ideally be calculated based on a weighted average of the individual risk score. The weighting should take into account the supervised financial institutions business model and supervisory view on the contribution of each in scope risk type towards the overall risk appetite. For simplicity, simple average may however be used.

179. The final score should be subjected to a rigorous review and challenge to ensure that there is no distortion arising from the use of simple average, and for assurance around overall reasonableness given the supervisory knowledge of the relevant bank.

180. The supervisor should communicate the findings of the impact and risk assessment as appropriate to the bank and should require the bank to take specified action(s) to mitigate any particular vulnerability that has the potential to impact its safety and soundness. The supervisory actions should be communicated in form of a Risk Mitigation Letter setting out: (a) the issue(s) identified by the supervisory body, (ii) underlying risk arising as a result of the identified issue, and (iii) expected action and deliverable from the bank to facilitate the closure of the identified issue.

181. The Risk Matrix below is an example of a summary table that can be used to assist in the generation of the final risk score for a specific bank.

10.2 Aggregation of Risk

Table 28: Aggregation of the scores for inherent risk and quality of risk management

Quality of Risk Management		Quality of Management Score	Level of Inherent Risk			
			L	ML	MH	H
Risk Score			1	2	3	4
Strong	H	1	Low	Low	Medium Low	Medium High
Acceptable	MH	2	Low	Medium Low	Medium High	High
Need Improvement	ML	3	Medium Low	Medium High	High	High
Weak	L	4	Medium High	High	High	High

10.3 Risk Matrix

182. The direction of risk can be either increasing, decreasing or stable and should be based on comparison between the current and the previous risk score.

Table 29: Risk Matrix

Risks	Level of Risk	Quality of Risk Management	Aggregate Risk	Direction of Risk ⁶
Business Model Analysis (Strategic and Business Risk)				
Credit including Country Risk				
Market including Foreign Exchange (FX) Risk				
Operational Risk				
Liquidity and Funding Risk				
Interest Rate Risk in the Banking Book				
Capital Risk				
Environment Risk				
Overall				

⁶The direction of risk to be assigned as either: (a) increasing, (b) decreasing , or (c) stable

II. ORGANISATIONAL ARRANGEMENT AND SUPERVISORY ENGAGEMENT MODEL

II.1 Organisational Arrangement

183. The regulatory body should ensure that, for conducting RBS, their organisational arrangements include at least the following:

- a) A description of the roles and responsibilities of supervisory staff and particularly in relation to the performance of the impact assessment and assessment of the inherent risk. The reporting lines should also be clear and well documented.
- b) A clear procedure for documenting findings from the risk assessment exercises and articulation of supervisory judgments.
- c) Appropriate process and governance framework for the approval of the supervisory findings and risk rating and control scores including a process aimed at ensuring that an agreed final score is arrived at particularly in instances where there are significant divergence in views.
- d) A supervisory engagement model based on the impact rating of the individual banks. This should set out the minimum resources to be allocated to each supervised bank or group of supervised banks, the frequency of the full risk review, and type of engagement over the supervisory cycle.
- e) A process for communicating the outcome of the impact and risk assessment to the bank subsequent to the full or partial risk assessment.

II.2 Supervisory Techniques

184. The following tables set out the BCBS expectation in relation to supervision techniques and tools, and the general tools of supervision.

Table 30: Supervisory Techniques

Basel Core Principle 9: Supervisory Techniques and Tool
<p>The supervisor uses an appropriate range of techniques and tools to implement the supervisory approach and deploys supervisory resources on a proportionate basis, taking into account the risk profile and systemic importance of banks.</p>
<p>EC 1: The supervisor employs an appropriate mix of on-site and off-site supervision to evaluate the condition of banks and banking groups, their risk profile, internal control environment and the corrective measures necessary to address supervisory concerns.</p>
<p>EC 2: The supervisor has a coherent process for planning and executing on-site and off-site activities.</p>
<p>EC 4: The supervisor uses a variety of tools to regularly review and assess the safety and soundness of banks and the banking system, such as: business model analysis, horizontal peer reviews; review of the outcome of stress tests undertaken by the bank; and analysis of corporate governance, including risk management and internal control systems.</p>
<p>EC 12: The supervisor has an adequate information system which facilitates the processing, monitoring and analysis of prudential information.</p>

Table 31: Supervisory tools

Supervisory Tools	
a)	Off-site surveillance: This involves off-site monitoring of the bank's performance and financial condition, and progress in the implementation of supervisory prescribed remedial actions
b)	Full scope on-site inspection: This is an inspection that covers all the material risk types inherent within a bank together with the overall risk management systems.
c)	Limited scope on-site inspection: This is an onsite inspection which does not cover all inherent risks but which focuses on a specific product, functional area, or risk type.
d)	Prudential meetings: These are meetings with bank's management to discuss its financial performance, risk profile, strategies, the market in which it operates, and any other issue of supervisory concern.
e)	Ad hoc meetings: These are meetings with bank's management to discuss business developments or plans and issues or concerns arising from the risk assessment process or desk-based analysis.
f)	Ad hoc inspections: These are prompt on-site inspections which are usually limited in scope, and designed to test a specific area of supervisory concern/
g)	Meetings with external auditors of the institution: These are meetings to discuss supervisory issues and any other issue that might need the attention of both the auditor and the supervisor. This can include; the external audit's scope, results or significant findings, and upcoming audit plans or activities; reports, management letters, and other communications with the bank's board audit committee. The scope can also include audit planning methodologies, risk assessments and sampling techniques, reliance on the work of internal auditors and the extent of external audit's assessment and testing of financial reporting controls; assigned audit staff experience and familiarity with banking and bank auditing, particularly in specialized areas.
h)	Liaison with other supervisors: These are normally correspondences or visit to other home or host supervisors to obtain further information or to discuss supervisory issues or action that might be taken by the appropriate supervisor. This may also include liaison with other domestic regulators.

11.3 Supervisory Engagement Model

185. The supervisory practices should be commensurate with the risk profile and the systemic importance of the bank being supervised. The following is therefore the proposed engagement model based on the impact rating.

186. Where applicable, CAMELS score in conjunction with the impact rating should be used as a guide to determine the frequency of on-site examinations and the general intensity of supervisory programmes for each bank.

Table 32: Supervisory Engagement Model

Category	Monitoring of key indicators	Full Risk Assessment	Minimum level of engagement
High	Quarterly	Annual	<ul style="list-style-type: none"> • Ongoing engagement with bank's senior management and the board • Assessment of each of the risk elements
Medium High	Quarterly	<ul style="list-style-type: none"> • At a minimum every 2 years • The risk rating to also be refreshed whenever there is a significant • The rating to also be revised on an ongoing basis to reflect any new information 	<ul style="list-style-type: none"> • Ongoing engagement with bank's senior management and the board • Assessment of each of the risk elements
Medium Low	Quarterly	<ul style="list-style-type: none"> • At a minimum every 3 years • The risk rating to also be refreshed whenever there is a significant event • The rating to also be revised on an ongoing basis to reflect any new information 	<ul style="list-style-type: none"> • Risk-based engagement with bank's senior and the board • Assessment of only the material risk element(s).
Low	Quarterly	<ul style="list-style-type: none"> • At a minimum every 3 years • The risk rating to also be refreshed whenever there is a significant event • The rating to also be revised on an ongoing basis to reflect any new information 	<ul style="list-style-type: none"> • Engagement with bank's management and the board at least once every • 3years.

12. CONSOLIDATED SUPERVISION

187. The concept of consolidated supervision requires that parent bank and parent supervisory authorities should monitor the risk exposure of the banks or banking groups for which they are responsible, as well as the adequacy of their capital, on the basis of the totality of their business wherever they are conducted.
188. The objective of consolidated supervision should be to: (a) prevent risk of supervisory gaps, (b) prevent double-leveraging of capital, and (c) ensure the supervised institutions measure their risks globally. Consolidated supervision should particularly: (a) ensure availability of information on the banks regional and global operations, (b) prevent corporate structures that hinder effective supervision, (c) prevent banks from creating foreign banking establishments in particular jurisdictions.
189. In the recent past, a number of banks or banking groups have spread across the East and Central African region establishing subsidiaries in the neighbouring countries. Such developments come with new risks, which call for appropriate regulatory actions. In the circumstances, the concept of consolidated supervision has evolved.
190. The conduct of consolidated supervision is provided for under the provisions of BCPs 12 and 13, which call for the establishment of “Home-Host” relationship between supervisory authorities through a memorandum of understanding (MoU). The rationale behind consolidated supervision is to enable the home or host supervisor to ascertain the financial soundness of the subsidiary or the entire banking group in view of inter-group trading. The home and host supervisors of cross-border banking groups under the MoU share information and cooperate for effective supervision of group and group entities and effective handling of crisis situations.
191. As an effective means of implementing consolidated supervision, the concept of Supervisory Colleges have been developed. A supervisory college is a working group of supervisors of international banking groups and has become a forum for addressing broader issues that impact on soundness and stability of the banking system in a given region. A supervisory college can also play an effective role in implementing crisis management and macro prudential analysis.
192. In employing supervisory colleges in the financial system’s regulatory framework, the following should be noted: (a) it should not replace the wider bilateral or multilateral cooperation between supervisors, (b) it should not be seen as a substitute for effective national supervision nor should it undermine the legal and prudential responsibilities of respective supervisors, (c) it should not replace other Basel Committee Guidance but rather build on it.

193. In addition to MoUs and Supervisory Colleges, consideration should be given to joint examinations as a method of information sharing with the aim of enhancing the understanding of cross border business operations of the supervised banks and their impact on the local entity.

13. APPENDIX

Appendix I - Best Practice Guidance and Benchmarks

1. *Basel Committee on Banking Supervision (BCBS)*

- 1.1. Core Principles for Effective Banking Supervision, September 2012
- 1.2. Corporate Governance Principles for Banks, July 2015
- 1.3. Sound credit risk assessment and valuation for loans, June 2006
- 1.4. Principles for the management of credit risk, September 2000
- 1.5. Basel III: The Liquidity Coverage Ratio and liquidity risk monitoring tools, January 2013
- 1.6. Basel III: net stable funding ratio, October 2014
- 1.7. Principles for Sound Liquidity Risk Management and Supervision, September 2008
- 1.8. Principles for the management and supervision of interest rate risk, July 2004
- 1.9. Principles for the sound management of operational risk, June 2011
- 1.10. The internal audit functions in banks, June 2012
- 1.11. Principles for the supervision of financial conglomerates, September 2012
- 1.12. High-level principles for business continuity, August 2006
- 1.13. A sound capital planning process: fundamental elements, January 2014
- 1.14. Monitoring tools for intraday liquidity management - final document, April 2013
- 1.15. Principles for effective risk data aggregation and risk reporting, January 2013
- 1.16. A framework for dealing with domestic systemically important banks, December 2012

2. *European Banking Authority (EBA)*

- 2.1. CEBS Guidelines on Liquidity Buffers and Survival periods, December 2009
- 2.2. EBA Guidelines on internal governance, September 2011
- 2.3. EBA Guidelines on the assessment of the suitability of members of the management body and key function holders, November 2012
- 2.4. EBA Guidelines on stress testing, August 2010.
- 2.5. EBA Guidelines on remuneration policies and practices, December 2010.
- 2.6. EBA Regulatory Technical Standards on the assessment of recovery plans under Article 6(8) of Directive 2014/59/EU, July 2014.
- 2.7. EBA Regulatory Technical Standards on the content of recovery plans under Article 5(10) of Directive 2014/59/EU, July 2014.

3. *Financial Stability Board (FSB)*

- 3.1. Financial Stability Board, Principles for An Effective Risk Appetite Framework, November 2013
- 3.2. Financial Stability Board, Guidance on Supervisory Interaction with Financial Institutions on Risk Culture, 2014
- 3.3. Financial Stability Board, Key Attributes of Effective Resolution Regimes for Financial Institutions , October 2014

Appendix 2 – Optional Indicators of Impact (Systemic Importance)

Optional Indicators

1	Total EAD
2	Total RWA
3	Off - balance sheet items
4	Market capitalization
5	Total EAD/GDP
6	Total Assets/GDP
7	Private sector loans
8	Mortgage loans
9	Business loans
10	Retail loans
11	Retail deposits
12	Deposits guaranteed under deposit guarantee system
13	Corporate deposits
14	All deposits
15	Number of retail customers
16	Share in clearing and settlement system
17	Payment services provided to market participants or others
18	Holdings of domestic bonds
19	Number of deposit accounts - business
20	Number of deposit accounts - retail
21	Geographical breakdown of bank's activity
22	Level 3 assets, i.e., assets that are very illiquid and hard to value
23	Derivatives (assets and/or liabilities side)
24	Value of Trading & available for sale securities (taking into account highly liquid assets)
25	Number of subsidiaries
26	Number of foreign subsidiaries

27	Number of jurisdictions active
28	Foreign net revenue / total revenue
29	Non-interest income / total income
30	Value of repos
31	Value of reverse repos
32	Potential contagion through entities in conglomerate
33	Potential reputational contagion
34	Interbank claims and/or liabilities
35	Connectivity to and from foreign banking system
36	Connectivity to and from foreign non-banks
37	Assets held for trading

Appendix 3 – Example of Monitoring Indicators

Indicator	Set Thresholds ⁷		
	Green	Amber	Red
Capital Risk			
Tier I Capital Ratio			
Common Equity Tier I Capital Ratio			
Debt-to-Equity			
Credit Risk			
Impaired loans to total loans			
Past due loans to total loans			
Provision coverage ratio			
Stock of provisions to total assets			
Impairments to total operating income			
Business Risk			
Return on equity			
Return on assets			
Cost-to-income			
Liquidity Risk			
Liquidity coverage ratio			
Net Stable Funding Ratio			
Short-term maturity gap			
Gross loans to deposits			
volatile deposits to total deposits			
Market Risk			
Net open position to core capital			
Income from trading to total income			
FX assets to total assets			
FX liabilities to total liabilities			
Interest Rate Risk in the Banking Book			
Interest sensitive assets to interest sensitive liabilities gap			
Interest sensitive assets to total assets			
Interest income to total income			
Investments in government securities to total assets			

⁷The threshold should be calibrated by each supervisory body taking into account the local experience, structure of the banking system and supervisory risk appetite.

Appendix 4 – Financial Soundness Indicators

Core set	
Capital adequacy	<ul style="list-style-type: none"> Regulatory capital to risk-weighted assets Regulatory Tier I capital to risk-weighted assets Nonperforming loans net of provisions to capital
Asset quality	<ul style="list-style-type: none"> Nonperforming loans to total gross loans Sectoral distribution of loans to total loans
Earnings and profitability	<ul style="list-style-type: none"> Return on assets Return on equity Interest margin to gross income Noninterest expenses to gross income
Liquidity	<ul style="list-style-type: none"> Liquid assets to total assets (liquid asset ratio) Liquid assets to short-term liabilities
Sensitivity to market risk	<ul style="list-style-type: none"> Net open position in foreign exchange to capital
Encouraged set	
Deposit takers	<ul style="list-style-type: none"> Capital to assets Large exposures to capital Geographical distribution of loans to total loans Gross asset position in financial derivatives to capital Gross liability position in financial derivatives to capital Trading income to total income Personnel expenses to noninterest expenses Spread between reference lending and deposit rates Spread between highest and lowest interbank rate Customer deposits to total (no interbank) loans Foreign-currency-denominated loans to total loans Foreign-currency-denominated liabilities to total liabilities Net open position in equities to capital



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