

# CENTRAL BANK OF NIGERIA



## GUIDELINES ON MANAGEMENT OF CREDIT CONCENTRATION RISK UNDER THE SUPERVISORY REVIEW PROCESS

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## 1. Abbreviations

Acronym	Description
BCBS	Basel Committee on Banking Supervision
CBN	Central Bank of Nigeria
CCF	Credit Conversion Factors
CRWA	Credit Risk Weighted Assets
DT	Down Turn
EAD	Exposure at Default
ECAI	External Credit Assessment Institutions
ICAAP	Internal Capital Adequacy Assessment Process
IFRS	International Financial Reporting Standards
IT	Information Technology
LGD	Loss Given Default
LR	Long Run
PD	Probability of Default
RW	Risk Weight
RWA	Risk Weighted Assets
SREP	Supervisory Review and Evaluation Process
UL	Unexpected Loss

## 2. Background

1. The Basel 2 Capital Framework does not fully address credit concentration risk in the context of Pillar 1. This results in potential underestimation of risk and capital requirements which should be addressed through Pillar 2 of the framework. Specifically, under Pillar 2 of the Basel 2 Framework, supervisors expect banks to hold adequate internal capital for all their material risks, including credit concentration risk. The additional internal capital should be allocated to the material risks after steps have been taken to mitigate them and hence they should be reflective of the unmitigated part of the relevant risk.
2. The principle of proportionality will be applied in the assessment of the banks' methodologies for the identification, measurement, monitoring, and management of credit concentration risk. The assessment will therefore take into account the size, systemic importance, scale and complexity of banks' activities which will reflect the risks arising from the exposures in each institution.
3. The Central Bank of Nigeria (CBN) recognizes that while concentration within the credit portfolio may increase vulnerability with regard to specific economic cycles and other external adverse events or shocks, specialization in certain business lines and/or geographical location may, in some specific instances, enhance the performance of a bank. This is because focusing on specific industrial sectors, markets, products or geographical regions may generate valuable expertise. The supervisor will therefore take a balanced view in the assessment of the level of inherent concentration risk, and the viability and sustainability of the banks' business model.
4. The implementation of International Financial Reporting Standard on Financial Instruments (IFRS 9) is expected to result in improvements in the banks' internal credit risk modelling capabilities. We therefore expect that banks will be in a position to generate the appropriate regulatory credit risk parameters for internal use in the estimation or challenge of their economic (internal) capital for credit risk and its sub-categories such as credit concentration risk.

### 3. The Concept of Credit Concentration Risk

5. According to the Basel Committee on Banking Supervision (BCBS), concentration risk is defined as any single exposure or group of exposures with the potential to produce losses large enough<sup>1</sup> to threaten a bank's health or ability to maintain its core operations.
6. Credit concentration risk arises as a result of credit portfolio having a skewed distribution of exposures across different segments. The segments may for instance consist of certain industries, geographical regions or correspond to individual counterparties.
7. Credit concentration risk can be classified into three main types. That is, single name, sectoral and credit contagion. Single name credit concentration relates to imperfect diversification of idiosyncratic risk in the portfolio because of either its small size or large exposures to specific individual obligors or groups of connected obligors. Sectoral credit concentration relates to imperfect diversification across industrial or geographical sectors. Credit contagion refers to the increased dependence or correlation of risk of default by counterparties as a result of their shared business connections such as supply chain links or counterparty exposures.
8. The estimations of contagion effect can be complex and require information on bilateral links between counterparties, which may not be available within the banks' credit management information systems. This methodology document therefore focuses only on the single name and sectoral credit concentration risks. Banks are however expected to put in place appropriate processes and procedures aimed at identifying and managing any potential contagion risk within their individual portfolios.

### 4. Supervisory Expectation

9. In addition to the existing regulations around credit concentration risk contained in our Prudential Guidelines for Deposit Money Banks, 2010 and any subsequent revision and other relevant Central Bank of

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<sup>1</sup> Relative to a bank's capital, total assets or overall risk level

Nigeria (CBN) circulars, the following section provides additional risk management processes and practices expected from banks to further enhance the management of concentration risks within their portfolios.

10. While this methodology covers credit concentration risk, banks are also expected to assess the materiality of other sources of concentration including those arising from concentration of funding sources, types of collateral, market risk factors and those that might increase operational risks. Where such concentration risks are assessed to be material, banks should be able to fully demonstrate to the CBN how they are being managed and where necessary should have a process in place for the estimation of the Pillar 2 capital add-ons relating to the risks.

#### **4.1 Credit Concentration Risk Management Framework**

11. Banks are required to identify the sources and degree of credit concentration risk in their portfolios, including those arising from:
  - a) Single counterparties and groups of connected counterparties;
  - b) Counterparties in the same industry, economic sector or geographical region;
  - c) Counterparties whose financial performance is dependent on the same activity, commodity or product; and
  - d) Exposures to particular asset classes, products, collateral or currencies.
12. Banks should adequately address credit concentration within their governance and risk management framework. This include, but not limited to, assignment of responsibilities for the management of credit concentration risk, and appropriate policies and procedures for the identification, measurement, management, monitoring and reporting of credit concentration risk.
13. The banks' framework for identification of credit concentration risk should be comprehensive enough to ensure that all the significant sources of concentration risk are covered. To facilitate this, a bank should have adequate data management systems and processes to

enable it to identify credit concentration risk arising from different types of exposures.

14. Banks should use stress testing as one of the key tools for the identification of credit concentration risk. Stress testing in particular allows banks to identify interdependencies between exposures which may become apparent only under stressed market conditions. The stress testing exercise for the purpose of identification of credit concentration risk should be performed at an enterprise wide, business line and entity level.
15. The banks' framework for measurement of credit concentration risk should facilitate the evaluation and quantification of the impact of credit concentration risk on its earnings, solvency and liquidity positions. The measurement framework should also facilitate assessment of ongoing compliance with the applicable regulatory requirements (e.g., solvency ratios, large exposure limits, sectoral limits etc) in a reliable and timely manner.
16. The bank should have a process in place aimed at ensuring that the senior management and the board are made aware of the material limitations and underlying assumptions of the credit risk measurement framework used to assess credit concentration risk. Further, where applicable, the limitations and assumptions of the credit risk measurement models and their calibration, should be adequately taken into consideration in the assessment and challenge of the adequacy of the estimated internal capital for credit concentration risk.
17. Banks' credit risk limit structures and levels should reflect its risk tolerance. The limit structures should cover both on- and off- balance sheet positions and the structure of assets at consolidated and solo levels. The limit structures should be appropriately documented and communicated to all the relevant levels of the bank.
18. Banks should implement adequate Information Technology (IT) infrastructure that will enable it to monitor credit concentrations arising from its exposure against approved limits. The results of such limit (and

limit utilization) monitoring should be included in management and operational reports for users of the limits. The bank should also implement appropriate escalation procedures aimed at addressing any limit breaches.

19. Single-name concentration risk should be assessed at the borrower or, where applicable, connection level rather than at the exposure or facility level. This is to ensure that the level of single name concentration risk is not underestimated.
20. The bank's measurement methodology for credit concentration risk should be commensurate with the size of their credit portfolio, complexity of its business, and the environment in which it operates.
21. An essential precondition for measuring sectoral credit concentration risk is a suitable sectoral classification of individual exposure. The definition of sectors should ideally facilitate direct allocation to individual risk factors. That is, a sectoral classification is ideal if the asset correlations are high within a sector and low between different sectors.

#### **4.2 Credit Concentration Risk within the ICAAP**

22. Banks should ensure that credit concentration risk is adequately taken into account within their Internal Capital Adequacy Assessment Process (ICAAP) and capital planning frameworks. This include, where applicable, an assessment of the amount of Pillar 2 capital considered to be adequate given the level of credit concentration risk within their portfolios.
23. Banks should be able to fully demonstrate that their internal capital assessment is comprehensive and adequate given the nature of their credit concentration risk.
24. Banks may take into account mitigation measures in their assessment of exposure to credit concentration risk. The assessment of the mitigation measures by a bank may take into account relevant factors such as:

- a) the quality of its risk management and other internal systems and controls; and
  - b) its ability to take effective and timely management action aimed at adjusting the level of its credit concentration risk.
25. Banks should develop and implement robust processes and methodologies for the assessment of capital requirements for credit concentration risk. The processes should capture all the material sources of credit concentration risk including, where applicable, those arising from exposure to limited number of: individual and related counterparties, industrial sectors and geographical regions.
26. Banks should, where applicable, be able to demonstrate the appropriateness of their approach to mapping of the estimated credit concentration risk metrics, into the Pillar 2 capital requirements for credit concentration risk based on, amongst others: own historical credit loss experience, and/or relevant benchmarks.
27. Banks should, where available, consider using the outputs of their internal credit rating systems including own estimates of credit risk parameters<sup>2</sup> as the basis for the estimation of Pillar 2 (internal) capital for credit default and concentration risks, and to address the known limitations of the current Pillar 1 approach to estimation of credit Risk Weighted Assets (RWAs) particularly as implemented in countries with low penetration of ratings by External Credit Assessment Institutions (ECAI).
28. Where a bank opts to use own estimates of credit risk parameters for Pillar 2 purpose, it should be able to fully demonstrate the appropriateness of such parameters. Specifically, it should be able to demonstrate that:

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<sup>2</sup> That is, Probability of Default (PD), Loss Given Default (LGD) and Exposure at Default (EAD)

- a) such parameters have been subjected to rigorous internal validation and the necessary adjustments<sup>3</sup> in line with best practice and supervisory expectation,
  - b) the underlying rating systems continue to perform well in terms of their ability to differentiate risk across obligors and to predict the risk of default at portfolio and rating grade level.
29. Where a bank opts not to apply approaches that require the use of internal credit risk parameters in the quantification of its Pillar 2 capital requirements for credit concentration risk, i.e., model-free or heuristics methods<sup>4</sup> then it should be able to demonstrate to the CBN that the selected approaches are:
- a) appropriate given its size and portfolio structure and captures the risk profile of its exposures;
  - b) consistently applied across all the exposures and portfolios; and
  - c) adequately conservative and does not result in underestimation of Pillar 2 capital requirement.
30. The expectation is that the adequacy of Pillar 2 capital estimates from model-free or heuristic methods should be validated (challenged) using appropriate industry benchmarks that takes into account the peculiarity of the bank's own credit portfolio and the structure of the Nigerian economy.

### **4.3 Management and Supervision of Credit Risk**

31. Banks should formulate a concise and practical definition of what constitutes a credit concentration risk. The definition should encompass the material sub-types of credit concentrations including, where applicable, those arising as a result of exposures to same counterparties, groups of connected counterparties, and counterparties in the same economic sector, geographic region or

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<sup>3</sup> The estimation of economic capital, which is meant to capture Unexpected Loss (UL), should ideally be based on the Long Run (LR) Probabilities of Default (PD) and Downturn (DT) or regulatory prescribed Loss Given Default (LGD) and Credit Conversion Factors (CCF).

<sup>4</sup> such as Herfindahl-Hirschman Index (HHI), Gini Coefficient, Concentration Indices, Diversification Scores, Ratios

from the same activity or common type of collateral, and the application of credit risk mitigation techniques.

32. Banks should employ appropriate methodologies and tools for the identification of their overall credit risk exposure with regard to a particular customer, product, industry or geographic location.
33. The infrastructure used to aggregate and consolidate credit exposures and to manage credit risk limits should be sufficiently robust. Further, the risk measurement models, methodologies and indicators used by banks to measure credit concentration risk should adequately capture the nature of the inter-dependencies between exposures.
34. Given that the choice of modelling approach to quantification of credit concentration risk may have a significant impact on the quality of assessment of credit concentration risk, banks should have a full understanding of the underlying assumptions and techniques embedded in their adopted credit risk models, ratings systems and methodologies.
35. Banks should be able to fully demonstrate that their approach to quantification of credit concentration risk takes into account the specific characteristics of their credit portfolios and any inter-relationships between their credit exposures. This is to ensure that the level of credit concentration risk is not underestimated.

#### **4.4 Reporting of Credit Concentration Risk**

36. Banks should have adequate arrangements in place for reporting of credit concentration risk, which ensures timely, accurate and comprehensive provision of appropriate information to senior management and the board on the level of credit concentration risk.
37. Banks must ensure that credit risk reports to the board and senior management are prepared in a manner that clearly explains and gives sufficient prominence to significant credit risk issues and developments that may materially impact the bank. In particular, the

structure, depth and coverage of the reports must enable the board and senior management to:

- a) relate the information being presented to the bank's credit risk strategy, risk appetite and credit risk policy, and to identify any of the three arrangements that need to be reviewed;
- b) be aware of significant credit exposures, both on an individual; and aggregated basis; and
- c) assess the need for measures to mitigate any emerging risks and vulnerabilities.

38. The banks monitoring and reporting framework for credit concentration risk should be reliable, timely and comprehensive to facilitate efficient decision making. The credit concentration risk management reports should provide qualitative and quantitative information on concentration risk as well as on material risk drivers and mitigating actions taken. The reports should include information at both consolidated and solo levels, as appropriate, and should follow the established limit structure, spanning business lines, geographical regions and legal entities.

39. Banks should derive a practical definition of what constitutes a material credit concentration in line with their risk tolerance. Banks should also determine their concentration risk tolerance taking into account their business model, size and geographic activity.

## **5. Supervisory Review and Evaluation Process (SREP)**

### **5.1 Approach to SREP**

40. The supervisory review and assessment of banks' exposure to credit concentration risk, and credit concentration risk management processes and practices will form part of the overall assessment of a bank's risk and business profile, and compliance with the requirements of the Basel 2 capital framework and other regulatory requirements

including requirements in relation to large exposures and sectoral limits and processes.

41. The supervisory assessment of a bank's credit concentration risk will take into account the bank's business model and strategy. This includes any strategy which could result in certain entities or business units being concentrated in certain geographical regions, products or markets as a result of the group-wide business strategy.

42. The supervisors will assess whether credit concentration risk is adequately captured in the bank's risk management framework. The supervisory review will in particular:

a) capture the quantitative, qualitative and organizational aspects of the banks' credit concentration risk management

b) involve an evaluation of the extent to which credit concentration risk management is embedded in the bank's risk management framework and whether the bank has considered all possible areas where credit risk concentration may arise.

43. Appropriate supervisory action will be taken if the supervisory assessment of the bank's credit concentration risk management processes and procedures identifies material deficiencies. The supervisory actions may involve requiring the bank to take:

a) remedial actions aimed at reducing the level of concentration of its credit portfolio, or

b) other management actions to mitigate against credit concentration risk.

44. The supervisors will ensure that the bank holds an adequate amount of capital against its credit concentration risk while taking into consideration any credit concentration inherent in the bank's chosen business strategy. Where the level of capital held by a bank against credit concentration risk is deemed to be inadequate given its level of inherent or potential credit concentration, then appropriate actions

will be taken. These actions will be aimed at reducing risk exposure and may include requiring the bank to hold additional capital under Pillar 2 of the Basel framework.

45. The requirement for banks to hold Pillar 2 capital in excess of the minimum level may also be used as a supervisory measure where banks are not able to demonstrate the appropriateness and adequacy of their internal processes for the identification, measurement, monitoring and mitigation of credit concentration risk.
46. The bank supervisors will assess the extent to which credit concentration risk is adequately captured in banks' stress testing exercise. The supervisors will also, in some instances, consider performing or requesting banks to perform additional stress tests to assess the potential impact of crystallization of credit concentration risk on their capital position. These additional tests may include application of relevant sectoral shocks.
47. The assessment of the credit concentration risk of a cross-border banks and its subsidiaries or legal entities, is expected to take into consideration the group's business model and strategy, including the board approved diversification strategy, which could result in certain entities being concentrated in certain sectors or products as a result of this group-wide diversification strategy.
48. The supervisor will also assess whether the credit risk mitigation techniques used by banks are adequate, manageable and fully understood by the relevant staff.
49. The inherent and potential credit concentration within cross-border banks will be closely reviewed and discussed by the college of supervisors and may form part of the joint risk assessment and inspection exercise. The review will take into account, amongst others, the fact that for cross-border banks, credit risk may arise at business line or legal entity level as a result of the groups' diversification strategy. Consequently, exposures at Group level that may be considered diversified, should also be assessed at both business and or entity level to see if there is concentration risk at that level.

## 5.2 The Central Bank of Nigeria Challenger Process

50. To facilitate the supervisory challenge of the adequacy of the banks' estimates of Pillar 2 capital for concentration risk, the CBN has developed a number of benchmarks and approaches to mapping of the estimated concentration risk metrics to an economic capital number. The benchmarks are simple methodologies based on the industry data aimed at assisting the CBN in having an idea of what the capital charge for Concentration risk could be. The benchmarks are expected to facilitate the rank ordering of banks in terms of the level of concentration of their credit portfolios and challenge on the adequacy or otherwise of their estimates.

51. The CBN approach to mapping of the concentration risk metrics to an economic capital figure (Pillar 2 capital) has been developed taking into account the available empirical studies and the historical loss experience of the Nigerian banks.

52. Specifically, the CBN challenger process is based on the estimated statistical relationship between the observed actual historical credit losses for the Nigerian banks and a number of credit concentration risk metrics and benchmarks.

53. The other considerations that will be taken into account in the assessment of the adequacy of banks' own estimates of Pillar 2 capital for credit concentration risk include:

- a) the quality of bank's credit portfolio;
- b) the correlation between the sectors and counterparties that the bank is exposed to; and
- c) the quality of a bank's policies and processes for the management of credit concentration risk.