CENTRAL BANK OF NIGERIA

GUIDELINE ON STRESS TESTING FOR THE NIGERIAN BANKS

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1. Abbreviations

Acronym	Description
AFR	Available Financial Resources
AFS	Available for Sale
BCBS	Basel Committee on Banking Supervision
BCP	Business Continuity Planning
Bps	Basis points
CCF	Credit Conversion Factors
CCR	Counterparty Credit Risk
CET 1	Common Equity Tier 1
CQS	Credit Quality Steps
DTA	Deferred Tax Asset
DTL	Deferred Tax Liability
EaR	Earnings at Risk
ECL	Expected Credit Loss
EL	Expected Loss
FVOCI	Fair value reported in other comprehensive income as defined in IFRS 9
FVPL	Fair value through profit and loss as defined in IFRS 9
IAF	Internal Audit Function
IFRS	International Financial Reporting Standards
LGD	Loss Given Default
LTV	Loan-to-Value
NII	Net Interest Income
PD	Probability of Default
PiT	Point in Time
PSE	Public Sector Entities
RST	Reverse Stress Test
RWA	Risk Weighted Assets
SREP	Supervisory Review and Evaluation and Process
STA	Standardized Approach
TC	Total Capital
VaR	Value at Risk

2. Executive Summary

1. The Basel Committee on Banking Supervision (BCBS), in an effort to address the issues identified during the Global Financial Crisis issued the "Principles for sound stress testing practices and supervision" in May 2009. However, given subsequent rapid evolution of stress testing in the years following the global financial crisis, the BCBS undertook a review of the supervisory and bank practices. This resulted in the update to those principles with the issuance of the "Stress Testing Principles' in October, 2018. The BCBS principles set out comprehensive standards on sound governance, and the design and implementation of stress testing frameworks at banks. Therefore, consistent with the Basel principles, these guidelines set out an enhanced approach to stress testing for the Nigerian banks and aims at ensuring the integration of the outcome into a bank's Internal Capital Adequacy Assessment Process ("ICAAP").

2. This guideline is particularly geared at steering banks towards the implementation of a more robust forward looking capital adequacy assessment, reflective of their risk profile and consistent with the expectation of Pillar 2 of the Basel capital framework.

3. The Central Bank of Nigeria (CBN) seeks to further enhance the Supervisory Review and Evaluation Process (SREP) by establishing additional stress testing as part of ICAAP requirements. The CBN will specifically evaluate the banks' stress test results to determine if a capital add-on is required under Pillar 2. A capital add-on may be required if stress test results reveal additional risk or vulnerability to capital that is not fully addressed through other risk mitigation measures. This will assist in determining a more risk sensitive minimum level of capital requirements for each bank. The outcome of the stress tests and related analysis can also be used as part of a bank's contingency planning and particularly to determine how persistent adverse economic scenarios or shocks could necessitate changes to a bank's business strategy or model.

4. This guideline addresses high-level principles, including Board and senior management involvement, risk governance and oversight, and

management actions that may arise as a result of the banks' internal capital assessment and stress testing process.

5. The focus of the supervisory review will be on the appropriateness of the banks' selected stress scenarios, the quality of governance and the robustness of the adopted methodology. The banks, where applicable, should be able to demonstrate the linkage between the selected scenarios and the key loss drivers such as Probability of Default (PD), Loss Given Default (LGD) and Expected Loss (EL). Where relevant, the PD and LGD for the estimation of the Expected Credit Loss (ECL) should meet the minimum requirements of the International Financial Reporting Standards on Financial Instruments (IFRS 9). Further, the computations of the mark-to-market losses as a result of the stress test shock should be fully supportable.

6. Banks should also, where applicable, consider making use of their other internally developed and validated risk quantification models in their stress testing exercise and should be able to provide a description of and justification for the methodology used to generate risk parameters including the relevant estimated parameters for all the credit portfolios. Further, banks should be able to provide strong rationale for the key stress testing assumptions.

7. The CBN is cognizant of the changes introduced under Basel 3 capital framework, which include: measures aimed at increasing the level and quality of minimum capital requirements over time, the prescription of additional capital buffers, introduction of leverage ratio as a supplement to the risk-based capital ratios, and harmonization of the definition of capital across jurisdictions. These changes have not been taken into consideration in the development of this guideline. This however should not prevent individual banks from early adoption of the full expectation of Basel 3 requirements and standards as part of their internal capital and liquidity management processes.

8. The CBN expects banks to design and implement applicable processes for integrating their stress testing exercise into their capital and liquidity adequacy assessment, and strategic planning activities. The

implemented processes and methodologies should ideally be consistent with current international best practice while taking into account local conditions and peculiarities, and bank's specific vulnerabilities.

9. This guideline focuses mainly on the content of the annual stress testing and capital assessment, which is submitted to the CBN as part of the annual ICAAP requirement. However, banks are expected to perform stress testing more frequently (at least quarterly) and should ensure and be able to demonstrate that stress testing is embedded into their risk management framework and processes.

3. Guidance on Stress Testing and Scenario Analysis

3.1 Stress Testing Procedures

A. The CBN expects banks to have in place documented procedures to undertake, review and, where appropriate, react to the results of rigorous, forward-looking stress testing that identifies possible events or cyclical changes in market conditions that could adversely impact the bank's earnings, liquidity or asset values.

10. Banks should conduct stress test of their risk mitigation and control systems and where necessary the adequacy of their internal capital and provisions for expected credit losses. This is to enhance the assessment of their vulnerability to different risk types and external shocks.

11. Stress tests should assess the impact on banks' exposure to specific events (sensitivity analysis) or joint movements of a set of economic and financial variables under adverse scenarios. **The selected scenarios should be plausible yet present a serious challenge to profitability and capital adequacy**. To adequately address concentration risk, the scenario should be bank-wide and comprehensive (on a consolidated and unconsolidated basis), covering balance sheet and off- balance sheet assets, contingent and non-contingent risks with appropriate and logical credit risk methodologies for purposes of estimating PD, LGD and

EL[1]. **Please see Appendix III** for the supervisory expectation in relation to the estimation of credit risk parameters[2].

12. The CBN requires all banks to clearly report the stress test results to its board and within the ICAAP report. The ICAAP report should, in particular, take into account all material exposures impacting capital position. The bank should be able to demonstrate the reasonableness of the estimated impact of the selected scenarios on the bank's capital position. To ensure appropriate and actionable outcome, banks may make specific assumptions in relation to their off-balance sheet exposures and material on-balance sheet exposures.

13. ICAAP stress tests should be undertaken at least annually and banks should implement stress testing process in a manner that is appropriate and commensurate to their risk profile and appetite.

14. Banks should develop, disclose and be ready to justify the rationale for their stress test assumptions. The selected scenarios should reflect senior management challenge and judgment and should take into consideration the materiality of particular business areas and their vulnerability to changes in economic and financial conditions.

15. Stress testing is a forward-looking risk analysis technique and banks should decide how far forward to look. Banks are required, however, to provide projections of their pre- and post- stress test regulatory capital position and the likely impact of the proposed management actions for at least three (3) years going forward.

16. Banks should appropriately take into account the estimated impact of changes in regulatory and accounting standards in the base year projections and/or over the forecasting horizon.

[1] Where a bank uses internal estimates of PDs and LGDs parameters for calculation of internal capital under Pillar it should be able to demonstrate that such parameters meets the minimum expectations, i.e., use of Long Run PDs and Downturn LGDs.
[2] Guidance Note to Banks and Discount Houses on the implementation of IFRS 9 (Financial Instruments) in Nigeria.

17. Banks' stress testing should where applicable assess the impact of risk drivers on their solvency. Banks should, as a minimum, stress test the common set of risks, which includes: (i) credit risk including Credit Counterparty Risk (CCR), (ii) market risk, and (iii) operational risk including conduct and cyber security risks. Banks should, where applicable, also project the impact of the selected scenarios on Net Interest Income (NII) and Profit and Loss, and capital items not covered by other risk types. The risk arising from sovereign exposures should be covered under either credit risk or market risk depending on their accounting treatment[3].

18. Banks with significant[4] foreign currency exposure should take into account the adjusted creditworthiness of their respective obligors, given the evolution of the relevant foreign exchange rate under the baseline and adverse scenario. The marginal impact from the risk emanating from foreign exchange lending exposure should cover both PDs (risk of default) and LGDs (or recovery rates in the event of default).

3.2 Macroeconomic Scenarios

B. Bearing in mind the significance of oil & gas and related exposures to the Nigerian economy and the balance sheets of local banks, management should continue to address the impact of a shock to the income stream in that sector and consider the impact of a sharp decrease in global oil price, with consequential impact on the rest of the economy.

19. As part of the suggested stress test, the CBN proposes that banks should consider the impact of adverse movements in: Gross Domestic Product (GDP) growth rate, interest rates, foreign exchange rates, inflation rate, corporate income, oil prices, private consumption, real estate prices, stock market valuation and investment growth. The banks should also take into account the potential impact of: security challenges, geopolitical tensions, conduct related issues, and operational risk events that could have a material impact on their operations, and

[3] The expectation is that the impact of changes in interest rates on the valuation of the Available for Sale (AFS) portfolio will be assessed as part of the banks' stress testing exercise.
[4] Significance should be based on the bank's Risk Assessment Framework.

capital and liquidity position. In addition, banks should also consider other macro-economic and external scenarios that may have direct or indirect impact on its capital or liquidity position, and should ensure that key variables within each scenario are internally consistent.

20. Banks should, resources allowing, determine their own expected PD under stressed conditions, taking into account the impact of selected macroeconomic scenarios on the current PD levels and should be in a position to persuasively support such assumptions.

3.3 Risk Specific and Dynamic Scenario Testing

C. As well as the risk-specific stress tests, the CBN also expects management to undertake dynamic scenario testing that estimates the impact of a combination of factors at different stages in the business cycle on its ability to meet regulatory capital on a sustainable basis. These assessments need not be overly sophisticated, but should extrapolate historical events and consider a range of options that include the depth and severity of economic conditions.

21. Stress testing should provide senior management and the Board with a consolidated view of the amount of potential capital losses under the selected stress test scenarios. Senior management and the Board should also therefore be presented with information that considers the adverse impact of different risks crystallizing simultaneously.

22. The CBN recognizes that one of the key challenges will be the availability of reliable data for past periods of stress and the need to support and inform stress tests based on historical experience. Banks that do not have sufficient historical data to cover a full economic cycle should apply inherent conservatism to their estimates and extrapolations to address any uncertainties as a result of data limitation.

3.4 Major Goals of Stress Testing

D. Two major goals of stress testing are to evaluate the capacity of the bank's capital to absorb potential material losses and to identify steps

to reduce economic risk and conserve capital. This assessment is integral to evaluating the bank's risk management strategy.

23. Stress testing should be used as a tool to alert bank management to adverse unexpected outcomes related to a variety of risks and provides an indication of how much capital might be needed to absorb losses should severe, yet plausible shocks occur. The CBN proposes that banks should operate stress testing framework that promotes comprehensive risk identification and control, provides a heightened risk perspective to other risk management actions, contribute to the formulation and pursuit of strategic and policy objectives and improve the overall quality of capital management.

24. Board and senior management involvement is critical in ensuring that stress testing outcomes are appropriately used in a bank's risk governance and capital planning process. This includes their involvement in: setting stress testing objectives, defining and selecting scenarios, discussing and challenging the results of stress tests and assessing the potential management actions.

25. The stress testing process should foster robust internal debate and provide a forum for credible challenge of key assumptions.

3.5 Monitoring of Stress Testing Results

E. The results of stress testing should be actively monitored by the Board and senior management.

26. The stress test results should be reported to the board and senior management on a regular basis, at the relevant level of aggregation. The reports should include, where applicable, the main modelling and scenario assumptions as well as any significant limitations.

27. The CBN expects the results from stress testing analyses to impact decision-making at the appropriate management level, including strategic business decisions of the Board and senior management. Board and senior management involvement is essential to effectively

deploy and integrate stress testing into the bank's risk management framework.

28. The CBN expects that Board and senior management will take a direct interest in the stress testing programme by providing oversight of the scenario selection and ensuring a level of management reporting that addresses all identified vulnerabilities. Following this, senior management can assess and adjust their view of the risks that the bank faces and formulate appropriate risk mitigating action.

29. The results of stress tests should, where appropriate, inform banks' calibration of risk appetite and limits, financial and capital planning, liquidity and fund risk assessment, contingency planning and recovery and resolution planning.

3.6 Stress Testing Infrastructure

F. A bank should have a suitably robust infrastructure in place, which is sufficiently flexible to accommodate different and possibly changing stress tests at an appropriate level of granularity.

30. Banks should have suitably flexible infrastructure as well as data of appropriate quality and granularity[5]. The infrastructure should enable the bank to: (i) retrieve, process and report information used in both internal and bank-run supervisory stress tests, (ii) aggregate its exposures to a given risk factor, product or counterparty, and (iii) modify its methodologies to facilitate the application of new scenarios as needed.

31. The stress testing infrastructure should also be sufficiently flexible to allow for targeted or ad-hoc stress tests at the business line or firm-wide level to assess specific risks in times of stress and rapidly changing market conditions. System flexibility is crucial to: (i) handle customized and changing stress tests and to aggregate comparable risks and exposures

[5] The data used should be accurate and complete, and available at a sufficiently granular level and in a timely manner. The granularity of the data should align with the objective of the stress test.

across a bank, and (ii) meet on-demand requests arising from both internal needs and queries from the supervisor.

32. Banks should have mechanisms in place aimed at ensuring continuing ability to carry out stress testing as per the documented policies and procedures. This includes consideration of the stress testing data infrastructure as part of the Business Continuity Planning (BCP) process.

33. Banks should have appropriate data reconciliation and other data quality processes to ensure that the data feeding into stress testing is accurate, complete and up-to-date. Banks should also, where appropriate, ensure consistency of data sources, processing, and aggregation across their stress tests.

3.7 Review of Stress Testing Framework

G. Banks should regularly maintain and update their stress testing frameworks. The effectiveness of the stress testing programme, as well as the robustness of major individual components should be assessed regularly and independently.

34. The effectiveness and robustness of stress tests should be assessed quantitatively as well as qualitatively, given the importance of human judgments and the severity of shocks considered. Areas for assessment should include:

a) the effectiveness of the programme in meeting its intended purposes;
b) documentation;
c) development work;
d) system implementation;
e) management oversight;
f) data quality; and
g) underlying assumptions.

35. The quantitative stress testing processes should, where practicable, include benchmarking with other stress tests within and outside the bank. Any quantitative stress testing models should also be subjected to appropriate validation including, where applicable, backtesting.

36. Since the stress test development and maintenance processes often imply judgmental and expert decisions (e.g. assumptions to be tested, calibration of the stress, etc.), the independent control functions such as risk management and Internal Audit Function (IAF) should also play a key role in the process.

37. Banks should ensure that adequate model inventory and model management processes are in place for their stress testing activities, including a robust model validation function. The documentation of models used for stress testing should be maintained and made available to Board and senior management and other internal and external stakeholders, such as supervisors.

3.8 Scope of Stress Tests

H. Stress tests should cover a range of risks and business areas, including at the firm-wide level. Banks should be able to integrate effectively, in a meaningful fashion, across the range of their stress testing activities to deliver a complete picture of firm-wide risk.

38. A stress testing programme should consistently and comprehensively cover business and entity specific view. Using a level of granularity appropriate to the purpose of the stress test, the stress testing exercise should examine the effects of shocks across all relevant risk factors, taking into account interaction among them.

39. Banks should also use stress tests to identify, monitor and control concentration risk. In order to adequately address concentrations risk, the scenario should be firm-wide and comprehensive, covering balance sheet and off-balance sheet assets and liabilities, contingent and non-contingent risks, independent of their contractual nature. Further, stress tests should identify and address potential changes in

market conditions that could adversely impact a bank's exposure to concentration risk.

40. The impact of stress tests is usually evaluated against one or more measures. The particular measures used will depend on the specific purpose of the stress test, the risks and portfolios being analysed and the particular issue under examination. A range of measures may need to be considered to convey an adequate information and appropriate perspective of the impact. Typical measures used include:

    a) asset values;

    b) accounting profit or loss;

    c) economic profit or loss;

    d) regulatory capital or Risk Weighted Assets (RWA);

    e) economic (internal) capital requirements; and

    f) Liquidity and funding gaps.

41. In order to effectively challenge the business model and support the decision-making process, the scenarios should facilitate the assessment of the nature of linked risks across portfolios and across time. A relevant aspect in this regard is the role played by liquidity conditions in determining the ultimate impact of a stress test.

3.9 Severity of Stress Test Scenarios

I. Stress tests should feature a range of severities, including events capable of generating the most damage whether through size of loss or through loss of reputation. A stress testing programme should also determine what scenarios could challenge the viability of the bank (reverse stress tests) and thereby uncover hidden risks and interactions among risks.

42. Stress tests should capture the most material business areas and events that might be particularly damaging for the bank. This could include not only events that could inflict large losses but which could subsequently cause damage to the bank's reputation.

43. Banks should perform adequate reverse stress tests as part of the stress testing programme, sharing the same governance and quality standards and to complement other types of stress testing. The reverse stress test including their frequency should take into account the nature, size, scale and complexity of their business activities and risks. Reverse stress tests start from a known stress test outcome[6] and then asking what events could lead to such an outcome for the bank. As part of the overall stress testing programme, it is important to include some extreme scenarios which would cause the firm to be insolvent (i.e. stress events which threaten the viability of the whole bank).

3.10 Interrelations between Risks

J. As part of an overall stress testing programme, banks should aim to take account of simultaneous pressures in funding and asset markets, and the impact of a reduction in market liquidity on exposure valuation.

44. Funding and asset markets may be strongly interrelated, particularly during periods of stress. Banks should therefore address in their risk management approaches the potential linkages between asset and funding liquidity.

45. Banks should enhance their stress testing practices by considering important interrelations between various factors, including, where applicable:

a) price shocks for specific asset categories;

b) the drying-up of corresponding asset liquidity;

c) the possibility of significant losses damaging the bank's financial strength;

d) growth of liquidity needs as a consequence of liquidity commitments; and

e) diminished access to secured or unsecured funding markets.

[6] The outcome could include: breach of regulatory defined minimum capital ratios, illiquidity or insolvency.

4. Risk Appetite

K. The key challenge for management is to demonstrate that it follows comprehensive procedures for identifying, assessing and mitigating risk and ensuring that these risks are effectively linked to the bank's risk appetite, capital and strategic planning processes.

46. The CBN expects bank's senior management to identify and articulate its risk appetite in the context of a stress testing framework and to understand the implications of stress events on its capital adequacy. If such stress test scenarios are likely to result in outcomes that are outside the bank's risk appetite, then the CBN will expect management to put in place corrective actions. Senior management must also be able to present the effects of possible management action on the stress test results with the Board providing credible challenge and oversight to the plausibility and suitability of such actions.

47. Management should also utilise comprehensive procedures for identifying, assessing and mitigating risks, and should ensure that these procedures are effectively linked to the bank's high-level risk appetite, capital and strategic planning process.

5. Management Actions

L. Where stress tests reveal particular vulnerabilities to a given set of circumstances, prompt steps should be taken to manage those risks appropriately.

48. The CBN expects that senior management and the Board will give proper consideration to the implications of the stress testing results. Where the stress test results or outcomes fall outside the bank's risk tolerance, management should formulate an appropriate response. The response may include raising of additional qualifying equity capital, restriction of dividends, revision of other limits impacting capital or other prompt corrective action. Banks may choose to complement these management actions through quantitative limits and portfolio caps, business dispositions and economic risk transfers. Any proposed action

must be clearly articulated with specified timeframes, acceptable to the CBN, for restoring an adequate level of capital to offset the impact of the stress.

49. Banks should also assess the potential impact of the stress test shock on its ability to implement the proposed management actions.

50. Where the stress test results in a capital deficit, the bank should implement policies and procedures detailing the range of prompt remedial actions envisioned, based on the purpose, type and result of stress testing, including an assessment of the feasibility of corrective actions in stress situations. To assess possible responses to a stressed situation, banks should identify the credible actions that are most relevant and respective triggers.

51. Management should set out realistic actions and time horizon to mitigate the potential impact of risk events.

52. The range of the proposed remedial actions should take into consideration the magnitude, severity and duration of the potential stress events and should be proportionate to those results of the stress test. In addition, the overall risk management framework and specific risk mitigating policies should be evident in these action steps. Acceptable management actions will be subject to the guidance and judgment of the CBN and might include the following:

a) The review of internal risk limits;
b) The review of the use of risk mitigation techniques;
c) The revision of policies including liquidity and funding or capital adequacy;
d) The reduction of distributions to shareholders;
e) The changes in the overall strategy and business plan and risk appetite; and
f) Raising of capital or funding.

6. Capital Planning

M. The ICAAP should provide specific insight into the implications of stress testing analysis on capital planning and how these affect the adequacy of the capital base and the distribution of capital within the group. In particular, these implications may include the impact of capital transferability in times of stress and capital barriers that may exist.

53. Within each ICAAP submission, management and the Board should examine future capital resources versus capital requirements under stressed scenarios. In particular, the results of forward-looking stress testing should always be considered when evaluating the adequacy of a bank's capital buffer.

54. Capital adequacy should be assessed under stressed conditions against a variety of capital ratios including regulatory capital ratios, as well as ratios based on the bank's internal definition of capital resources.

55. Stress testing should constitute a central tool in identifying, measuring and controlling capital and liquidity risks, in particular for assessing the resiliency of the bank's liquidity profile and the adequacy of its liquidity buffers in case of both bank-specific and market-wide stress events.

56. All capital and liquidity contingency plans should take into consideration the results of the stress test exercise and should form an integral part of the ICAAP submission. Senior management and the Board should also monitor and assess the dynamic relationship between liquidity and capital.

N. A sound and effective governance structure is necessary for a bank to conduct an accurate assessment of its risk profile and essential to sustaining an appropriate capital adequacy position.

57. Banks should have a sufficiently detailed strategic plan that clearly outlines the bank's current and projected capital position under a range of scenarios, and consistent with the prevailing regulatory

requirements. Senior management and the Board should also have an effective framework for assessing and providing oversight around the various risks facing the business and relating those risks to the bank's capital needs. Banks should also incorporate any strategic or other material risks inherent in their business model into their capital planning process.

7. Appendix I: Stress Test Results and Projections

A. Summary of Stress Test Results

a) The CBN requires banks to follow the format in Table 1 below when presenting the summary of their stress test results as part of the ICAAP.

b) The impact of the stress test scenario (shock) should be assumed to be instantaneous and should capture the feedback effect of the assumed macroeconomic scenario on other risk drivers. All results should, where applicable, be presented for both the solo and the consolidated entity.

c) Exposures that are expected to be downgraded or to default as a result of the stress test shock should be risk-weighted at the appropriate risk weights as per the prevailing Pillar 1 capital calculation requirements for Nigerian banks.

Table 1: Summary results of the stress test scenario

Amounts in N'000	Current	Projection		
		Year 1	Year 2	Year 3
Pre - stress Test (Base Case)				
Tier 1 Capital	XXX	XXX	XXX	XXX
Tier 1 + Tier 2 Capital (Total Capital)	XXX	XXX	XXX	XXX
Risk Weighted Assets (RWA)	XXX	XXX	XXX	XXX
CAR Ratio	XX%	XX%	XX%	XX%
Tier 1 Capital Ratio	XX%	XX%	XX%	XX%
Impact of Stress Test Scenario				
Losses arising from stress test scenario[7]		Year 1	Year 2	Year 3
Governments and central banks		XXX	XXX	XXX
Public sector entities		XXX	XXX	XXX
State governments and local authorities		XXX	XXX	XXX
Multilateral Development Banks		XXX	XXX	XXX
Supervised institutions		XXX	XXX	XXX
Corporates and other persons		XXX	XXX	XXX
Retail portfolio		XXX	XXX	XXX
Mortgages on residential properties		XXX	XXX	XXX
Mortgages on commercial real estates		XXX	XXX	XXX
Past due exposures		XXX	XXX	XXX
High risk exposures		XXX	XXX	XXX
Unsettled and failed transactions		XXX	XXX	XXX
Other exposures		XXX	XXX	XXX

[7] The exposure classes are based on Basel II exposure types. Refer to CBN Guidance Notes on Credit Risk

Amounts in N'000	Current	Projection		
		Year 1	Year 2	Year 3
Total losses arising from the stress test scenario		**XXX**	**XXX**	**XXX**
Post - Stress test (Stress Case)				
Stressed Total RWA		XXX	XXX	XXX
Stressed Tier 1 Capital		XXX	XXX	XXX
Stressed Total Capital (TC)		XXX	XXX	XXX
Stressed Tier 1 Capital Ratio		XX%	XX%	XX%
Stressed CAR Ratio		XX%	XX%	XX%
Capital required to get to CBN minimum TC (10% or 15%)		XXX	XXX	XXX
Management actions				
Raising of additional capital		XXX	XXX	XXX
Revision of dividend policy		XXX	XXX	XXX
Other management actions (please specify)		XXX	XXX	XXX
Additional Capital Required		**XXX**	**XXX**	**XXX**
Tier 1 capital Ratio post - management actions		XX%	XX%	XX%
CAR post - management actions		XX%	XX%	XX%

B. Financial Projections

The CBN will require the regulatory capital projection (Table 2) and the movement in retained earnings projection (Table 3) for a minimum of three (3) years going forward. The projections should be provided under the base case and stress scenario and should be consistent with the bank's specific forward-looking business plan. The current balance should be based on the most recent audited financial year-end results. The results should, where applicable, be presented for both the solo and the consolidated entity.

a) Regulatory Capital

Table 2: Projection of Regulatory Capital

Amounts in N'000	Current	Projection (Base Case)			Projection (Stress Case)		
		Year 1	Year 2	Year 3	Year 1	Year 2	Year 3
Tier 1 capital							
Ordinary shares	XXX	XXX	XXX	XXX	XXX	XXX	XXX
Share premium account	XXX	XXX	XXX	XXX	XXX	XXX	XXX
Perpetual non - cumulative preferred shares	XXX	XXX	XXX	XXX	XXX	XXX	XXX
Retained earnings at the end of the year	XXX	XXX	XXX	XXX	XXX	XXX	XXX
Others	XXX	XXX	XXX	XXX	XXX	XXX	XXX
Total Tier 1 capital	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**
Tier 2 capital							

Amounts in N'000	Current	Projection (Base Case)			Projection (Stress Case)		
		Year 1	Year 2	Year 3	Year 1	Year 2	Year 3
Subordinated debt (eligible for inclusion)	XXX	XXX	XXX	XXX	XXX	XXX	XXX
General provisions (eligible for inclusion)	XXX	XXX	XXX	XXX	XXX	XXX	XXX
Others	XXX	XXX	XXX	XXX	XXX	XXX	XXX
Total Tier 2 capital	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**
Other adjustments	XXX	XXX	XXX	XXX	XXX	XXX	XXX
Total regulatory capital	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**
Regulatory Risk Reserve	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**

b) Retained Earnings

Table 3: Projection of Retained Earnings

Amounts in N'000	Current	Projections (Base Case)			Projections (Stress Case)		
		Year 1	Year 2	Year 3	Year 1	Year 2	Year 3
Retained earnings at the beginning of the year	XXX	XXX	XXX	XXX	XXX	XXX	XXX
Net interest income	XX	XX	XX	XX	XX	XX	XX
Fee income	XX	XX	XX	XX	XX	XX	XX
Commission income	XX	XX	XX	XX	XX	XX	XX
Non - interest expenses	XX	XX	XX	XX	XX	XX	XX
Others components of profit and loss statement (including income from off-balance sheet positions)	XX	XX	XX	XX	XX	XX	XX
Net profit and loss	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**
other adjustment (e.g., dividends)	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**
Retained earnings at the end of the year	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**

8. Appendix II: Supervisory Stress Test Assumptions

The CBN suggests the use of the following risk drivers, where applicable to the bank's own portfolio and risk profile while taking into account the materiality of the potential impact:

a) Decline or stagnation in oil prices and decrease in oil production

b) Depreciation of the Naira against major global currencies

c) Deceleration in the GDP growth rate

d) Adverse fluctuations in short-term and long-term interest rates

e) Reduction or stagnation in corporate income

f) Increase in inflation rate

g) Economic deterioration in other jurisdictions where the bank has operations

h) Decrease in value of sovereign and corporate bonds

i) Increase in the value of contingent fiscal liabilities at all levels of government

j) Higher than expected liquidity outflows

k) Increase in funding cost

l) Damage to the bank's reputation

m) Significant losses at a subsidiary or associate entity

Banks should also consider specific drivers and variables that are expected to have an impact on the exposure to sovereigns and supervised financial institutions including mark-to-market or mark-to-model exposures. This may include risk drivers such as interest rate, equity price and rating migrations.

Banks should provide, as part of their stress testing exercise, detailed analysis and/or justification of how the relevant macroeconomic parameters were translated into specific shocks to the individual portfolio of the bank. Further, banks should provide details of the assumed level or changes in the following drivers, where relevant, under base and adverse

(stress) scenarios for the main geographical locations where it has operations.

Table 4: Key risk drivers and forecasting assumptions

Risk Driver	Base Case			Stress Case		
	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3
GDP Growth Rate						
Interest Rates						
Unemployment Rate						
Oil Prices per Barrel (US$)						
FX rates (US$ to Naira)						
Inflation Rates						
Changes in Real Estate Prices						
Export Growth Rate						
Investment Growth Rate						
Year-on-Year Changes in Stock Market Valuation (NSE Index)						
Fiscal deficit						
Government debt service to revenue						

9. Appendix III: Credit Risk Parameters

1. Where applicable, banks should provide summary description of the methodology used to derive the starting position point-in-time (PiT) parameters[8] used to generate the ECL under IFRS 9 for all portfolios, and for the generation of the projected credit risk parameters over the forecasting time horizon. This can be in form of a supplementary submission to the ICAAP.

2. The estimation of projected parameters, i.e., stressed PD and LGD parameters (under both the baseline and the adverse scenario) should where practical be based on the bank's internal credit risk models. However, where a bank does not have the appropriate internal models for the generation of forward-looking credit risk parameters then consideration should be given to the application of industry benchmarks to inform or to challenge expert judgement applied in the quantification of the impact of the selected stress test shock.

3. Where applicable, the models used as part of the banks' stress testing should meet the minimum standards in terms of econometric/statistical soundness and responsiveness of the risk parameters to macroeconomic shocks to ensure the model specification results in a prudent outcome. Banks should be able to demonstrate this to the CBN by making available the outcome of the:

   a) relevant statistical tests carried out as part of the model development and testing, and

   b) outcome of the internal validation exercise[9].

[8] That is, PD, LGD and CCF (or utilization rate) for off-balance sheet exposures
[9] The internal validation should include the necessary backtesting and sensitivity analysis to assess the impact of changes in the model assumption on the model output

10. Appendix IV: Additional Reporting Templates

a) Credit Risk Summary

Table 5: Credit Risk Summary Results[10]

(N' 000, %)	Current	Base Case			Stress Case		
		Year 1	year 2	Year 3	Year 1	year 2	Year 3
End of year information							
Performing exposure share (%)							
Stage 1 share (%)							
Stage 2 share (%)							
Non-performing exposure - Stage 3 (%)							
Stock of provisions (N'000)							
Coverage - Performing exposure (%)							
Coverage Stage 1 (%)							
Coverage Stage 2 (%)							
Coverage Non-performing exposure - Stage 3 (%)							
Staging flow							
Stage 1 to stage 2 (N'000)							
Stage 1 to stage 3 (N'000)							
Stage 2 to stage 1 (N'000)							
Stage 2 to stage 3 (N'000)							
Stage 3 to stage 1 (N'000)							
Stage 3 to stage 2 (N'000)							
Impairment							
Total impairment losses (N'000)							
Of which: Impairment loss - stage 1 to stage 2 (N'000)							
Of which: Release of Stage 1 provisions ((N'000) (-)							
Of which: Release of Stage 2 provisions (N'000) (-)							
Of which: Impairment loss - stage 2 (N'000)							
Impairment loss - stage 1 to stage 3 (N'000)							
Impairment loss - stage 2 to stage 3 (N'000)							
Of which: Impairment loss - stage 3 (N'000)							
Risk parameters							
Exposure weighted average PD PiT (%)							
Exposure weighted average LGD PiT new (%)							

[10] The classification of exposures should be as per the expectation of IFRS 9. This Table should be completed on a best effort basis.

b) Staging Flow by Asset Class

Banks should, where applicable, report the following under base and stress case scenario over their capital planning (forecasting) horizon.

Table 6: Staging Flow Base Asset Classes[11]

	Exposure %			Provision Cover %			Average[12]	
	Stage 1	Stage 2	Stage 3	Stage 1	Stage 2	Stage 3	PD PiT	LGD PiT
Actuals								
Governments and central banks								
Public sector entities								
State governments and local authorities								
Multilateral Development Banks								
Supervised institutions								
Corporates and other persons								
Retail portfolio								
Mortgages on residential properties								
Mortgages on commercial real estates								
Past due exposures								
High risk exposures								
Unsettled and failed transactions								
Other exposures								
Year 1 - Projections								
Governments and central banks								
Public sector entities								
State governments and local authorities								
Multilateral Development Banks								
Supervised institutions								
Corporates and other persons								
Retail portfolio								
Mortgages on residential properties								
Mortgages on commercial real estates								
Past due exposures								
High risk exposures								
Unsettled and failed transactions								
Other exposures								
Year 2 - Projections								
Governments and central banks								
Public sector entities								
State governments and local authorities								
Multilateral Development Banks								
Supervised institutions								
Corporates and other persons								

[11] This Table should be completed on a best effort basis
[12] Exposure Weighted Average

	Exposure %			Provision Cover %			Average[12]	
	Stage 1	Stage 2	Stage 3	Stage 1	Stage 2	Stage 3	PD PiT	LGD PiT
Retail portfolio								
Mortgages on residential properties								
Mortgages on commercial real estates								
Past due exposures								
High risk exposures								
Unsettled and failed transactions								
Other exposures								
Year 3 - Projections								
Governments and central banks								
Public sector entities								
State governments and local authorities								
Multilateral Development Banks								
Supervised institutions								
Corporates and other persons								
Retail portfolio								
Mortgages on residential properties								
Mortgages on commercial real estates								
Past due exposures								
High risk exposures								
Unsettled and failed transactions								
Other exposures								

c) Evolution of Risk Weighted Assets (RWA)

Banks should report the evolution of their risk weighted assets for each of the Pillar 1 risk types under base and stress case scenario over their capital planning horizon as per Table 7 below.

Table 7: Evolution of RWAs under base and stress case

(N'000)	Current	Base Case			Stress Case		
		Year 1	year 2	Year 3	Year 1	year 2	Year 3
RWA for credit risk							
RWA for market risk							
RWA for operational risk							
Other RWA							
Total RWA							

d) Location of Capital

Banks should, where applicable, also report the expected distribution of capital across its group entities at the end of capital planning horizon under base and stress case scenario as per Table 8 below.

Table 8: Distribution of capital across the group

Amounts (N'000)	Base Case			Stress Case		
	Available Regulatory Capital	Risk Weighted Assets	Minimum Regulatory Total Capital Ratio (%)	Available Regulatory Capital	Risk Weighted Assets	Minimum Regulatory Total Capital Ratio (%)
Consolidated Level						
Parent Level						
Subsidiary 1						
Subsidiary 2						
Subsidiary 3						
Subsidiary 4						
Subsidiary 5						
Subsidiary 6						
Subsidiary 7						
Subsidiary 8						
Subsidiary 9						

e) Exposures to Corporates and Other Persons

Please also report (as per the Table below) the level of exposures to corporates and other persons classified by:

a) the IFRS 9 performance stage or any other accounting standard,

b) the most recent loan-to-value ratio, and

c) type of collateral.

The amounts should be reported in thousands of Naira and the bank should be in a position to provide a reconciliation of the reported figures to the audited financial statements (General Ledger)

Table 9: Collateral coverage of exposure to corporates and other persons

Collateralized by Real Estate	Loan-to-Value (LTV)					Total exposure	Exposure Weighted Average LTV
	0 -25%	25 - 50%	50 - 75%	75 - 100%	>100%		
Stage 1							
Stage 2							
Stage 3							
Sub-total							
Collateralized by other assets	**Loan-to-Value (LTV)**					**Total exposure**	**Exposure Weighted Average LTV**
	0 -25%	**25 - 50%**	**50 - 75%**	**75 - 100%**	**>100%**		
Stage 1							
Stage 2							
Stage 3							
Sub-total							
Total Secured Exposures to corporates and other persons							
Unsecured exposures to corporates and other persons							
Total exposure to corporates and other persons							