

Comprehensive Assessment of the Bulgarian Banking System

Initial Guidance to the Asset Quality Review (AQR)

12 February 2016

Introduction

Pursuant to §9 of the Transitional and Final Provisions of the Law on Recovery and Resolution of Credit Institutions and Investment Firms and Art. 80 of the Law on Credit Institutions, Bulgarian National Bank is conducting Comprehensive Assessment (CA) of the Bulgarian banks. The first stage comprises of carrying out an independent review of the quality of assets (AQR) in the banks.

This Comprehensive Assessment shall also include stress tests of the banking system using the outcomes of the AQR under Art. 80b of the Law on Credit Institutions to establish the banks' ability to absorb unexpected losses from hypothetical shocks. Appropriate measures will be undertaken to ensure that the banks are able to provide the required coverage of any potential capital shortfall identified by the CA.

The Comprehensive Assessment

The CA is to be conducted by the BNB, which will have an ongoing role as supervisor of the banking system with the assistance of Deloitte as external independent consultant. To ensure adherence to best practices in conducting similar exercises, the BNB intends to hold consultations with the EC and the European Banking Authority (EBA) over the course of the project.

The timeline of the CA is as published in Decision № 28 of the Council of Ministers in the August 2015 State Gazette. Following are the key interim milestone dates:

Publication of the initial guidance of the AQR methodology	12 February 2016
Start of the AQR Process	15 February 2016
Completion of projection of findings	6 July 2016
Completion of stress tests	29 July 2016
Analysis of results and remedial actions	1 August 2016
Publication	13 August 2016

AQR Methodology

The underlying methodology for this exercise shall be the ECB AQR methodology as outlined in the Manual published 14 March, 2014 (Manual) unless explicitly stated herein. There will be clarifications to the initial guidance, within the principles described in the methodology.

This initial guidance document includes amendments to the Manual in the area of risk-based portfolio selection; this is outlined in workblock (WB) WB-3: *Sampling*. The approach that has been adopted takes into account the fact that this is a country-specific exercise where the supervisor has an inherent knowledge of the banking sector including its size, the risk-weighted assets of the constituent banks, the existing risk management and lending practices, and supervisory reporting requirements¹. The amendments are made to ensure the timely and effective execution of this project while maintaining the ECB principles.

Key outputs of the AQR exercise

Any key findings will be communicated by the BNB's Banking Supervision Department to the relevant bank, following the completion of the exercise. These findings may include areas where the bank is found to be outside accounting principles (i.e. banks report under the International Financial Reporting Standards (IFRS) / International Accounting Standards (IAS) – IAS 39, IAS 37, IFRS 13) and may lead to adjustments to Common Equity Tier 1 (CET1) capital.

Stress testing

The AQR will also generate a series of parameters that will be used as inputs to the stress test process. These inputs include the following amongst others: any adjustments to data underlined by the data integrity validation (DIV) workblock, Probability of Impairment (PI) and Loss Given Impairment (LGI). Further clarification on the methodology, including the role of the AQR Providers in providing and verifying the inputs for the stress test will be circulated by the end of April 2016.

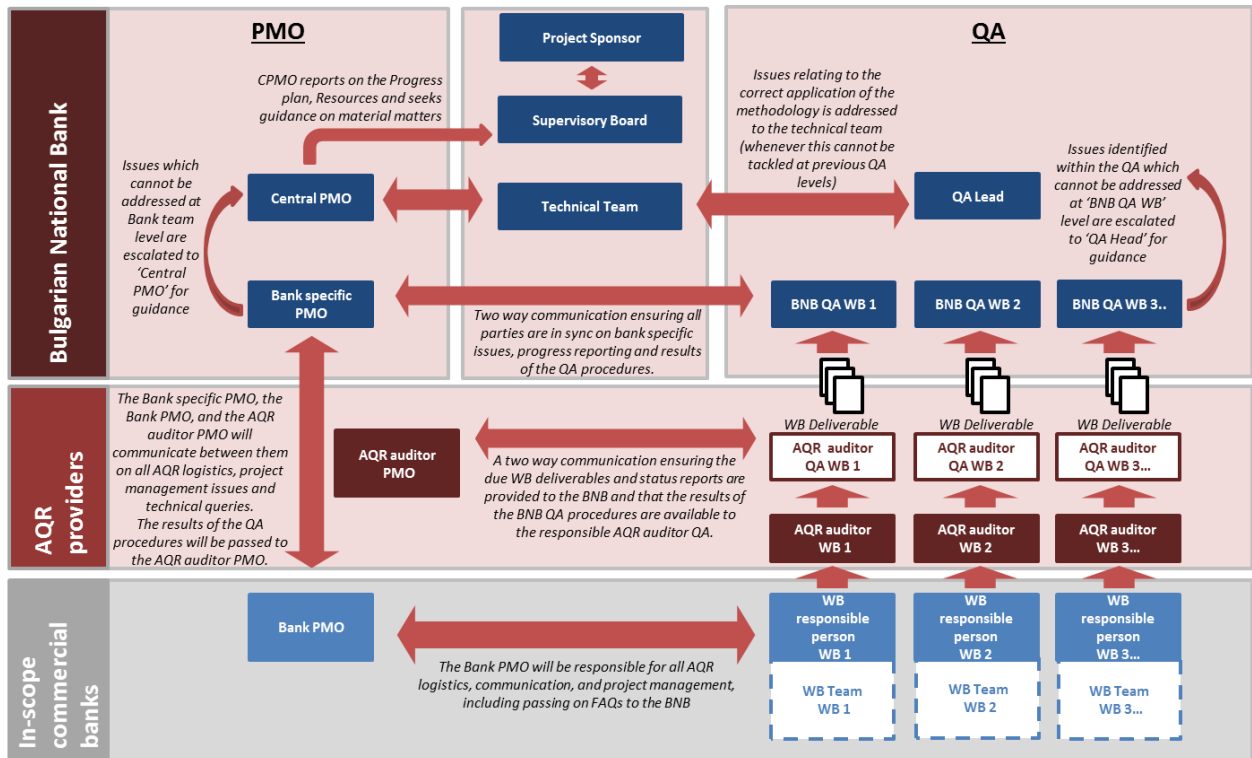
¹ Supervisory reporting as per Regulation 573/2013 and 680/2014

I. Project Governance

This section includes a high-level overview of the project management and project governance structure that the BNB, jointly with Deloitte have set for the planning and implementation of the Comprehensive Assessment.

The document outlines the organization of work and key project groups, their role as well as lines of reporting.

The project governance structure is illustrated below. Project escalation procedures are being set to align with the governance hierarchy.



The subsequent sections describe the key roles and project groups presented above in more detail, using the following table structure:

Accountabilities

Duties and responsibilities of the role or group.

Relationships

Description of the relationships the role or group has with the Exercise, as well as how interactions and/or communications between roles/groups will be handled.

A: BNB Governance Bodies

1. Project Sponsor

Accountabilities:

- Oversee the Project
- Provide strategic direction for the Project
- Promote the long-term vision for the Project
- Resolve the escalated project related issues and risks in a timely manner

Relationships:

- Provide guidance and/or decision-making for high-impact project issues and escalated project requests
- Joint leadership guidance and decision-making if participating in project governance bodies like the Project Supervisory Board.
- Communicate directly to the Project through face-to-face meetings or webcasts; also through the Central Project Manager Office (CPMO)
- *AQR related standing meetings:*
 - Meets twice a month with the Supervisory Board and Central Project Management Office to review project progress and address escalated project risks, issues, decisions, action items, and other requests

2. Project Supervisory Board

Accountabilities:

- Ultimate decision taker for project baseline schedule, budget, scope, resources and quality
- Provide access to resources and information outside of the project
- Confirm and validate appropriate organizational commitment to project schedule and budget

Relationships:

- Steers the projects and communicates through the CPMO
- *AQR-related standing meetings:*
 - Meets twice a month to discuss following agenda:
 - i. Progress plan
 - ii. Resources
 - iii. Overall project guidance
 - Meets twice a month with Project Sponsor and CPMO to review project progress and address escalated project risks, issues, decisions, action items, and other requests

3. Technical Team

Accountabilities:

- Receives AQR Provider FAQs and provides answers within reasonable timeframes
- Issues guidance on the application of the AQR methodology
- Issues methodological circulars to the Banks and AQR Providers

Relationships:

- Communicates with CPMO

B: BNB Project Management Office (PMO)

1. Central PMO*

Accountabilities:

- Manage the timeline of the exercise, scope, budget, and quality so they align with leadership expectations
- Closely monitors the reporting of Bank-specific PMOs and challenges the progress reports
- Coordinate amongst multiple stakeholders to ensure a consistent view of the project progress
- Ensure clear and focused reporting, early escalation of most material issues and facilitates the resolution process
- Develop the reporting structure and processes
- Develop the PMO progress tracking tools and tracks information obtained from the Banks
- Manage meeting schedules, agendas, meeting minutes, and tracks actions and decisions
- Develop and manage the central contact list of the exercise

Relationships:

- Supervise Bank-specific PMOs and QA
- Communicate FAQs and receive guidance from the Technical Team
- Report to the BNB Project Supervisory Board and the Project Sponsor
- *AQR related standing meetings:*
 - Meets twice a month with the Supervisory Board
 - Meets twice a month with the Project Sponsor
 - Meets at least every two weeks or more frequently when needed with the Bank-specific PMOs (split into Tier 1, Tier 2 and Tier 3 banks)

2. Bank-specific PMOs

Accountabilities:

- Take ownership and responsibility for the successful execution of the AQR at the Bank level
- Develop a granular project plan in accordance with the BNB AQR timeline
- Coordinate and manage the timeline and deliverables
- Provide timely reporting to the CPMO
- Log and escalate the issues and risks to the CPMO
- Follow the results of the BNB QA procedures and distributes them to the AQR Provider PMO
- Ensures effective communication and transfer of information to the Bank PMO and the AQR Provider PMO
- Manages meeting schedules, agendas, meeting minutes, and tracks actions and decisions

Relationships:

- Supervise the specific AQR Provider PMO
- Report to the CPMO
- *AQR related standing meetings:*
 - Meets with the BNB CPMO (split into Tier 1, Tier 2 and Tier 3 banks)
 - Meets weekly with the Bank PMO and AQR Provider PMO
- Escalates questions from AQR PMO to CPMO

C: BNB Quality Assurance (QA)

1. QA Lead and QA-teams per work block

Accountabilities:

- Review project implementation in terms of their impact to the baseline schedule, cost, scope, and quality to stay aligned with the Project's business objectives
- Recommend actions to CPMO to ensure the maintenance of critical path
 - BNB QA teams per each AQR work block:
 - QA of the work produced by the AQR Provider's QA team and assuring that it is accurate before submission to the BNB QA Lead
 - Providing methodological guidance to the AQR Provider's QA team consistent with the AQR methodology
 - BNB QA Lead:
 - Providing QA, through for example consistency checks across banks, to ensure the AQR is carried out accurately and consistently across the banks
 - Managing the BNB QA process at a country level, including communication with the BNB QA per work block teams on QA related topics

Please refer to *WB-10: Quality Assurance and Progress Tracking* for further details.

Relationships:

- QA Lead reports to CPMO, communicates and cooperates with the Bank-specific PMOs and the Technical team
- QA Lead supervises the QA teams per work block, to ensure quality and timely completion of deliverables review

D: AQR Provider

1. AQR Provider PMO

Accountabilities:

- Ensures the coordination of the AQR Provider team and compliance with the BNB AQR deliverables timeline
- Internally gathers all the queries and questions from the AQR Provider team and forwards them to the BNB Bank-specific PMO
- Ensures the timely communication of all the relevant information received from BNB
- Provides the results of the BNB QA procedures to the responsible AQR Provider QA
- Ensures the appropriate staffing and the execution of the contractual relationship with the BNB and the Bank
- Reports and provides project related information to the BNB Bank-specific PMO (timesheets, status of the work block deliverables, PMO Tool, FAQ)

Relationships:

- Main contact to the BNB Bank-specific PMO and the Bank PMO
- *AQR related standing meetings:*
 - Meets weekly with the BNB Bank-specific PMO and Bank PMO

2. AQR Provider team per work block

Accountabilities:

- Prepares and provides the data requests to the Bank under review
- Ensures timely population of templates to be reviewed by AQR Provider QA
- Takes actions to address the results of the QA performed by the AQR Provider QA
- As a result of the work performed, communicates the remediation activities/ additional data to be provided by the responsible Bank teams
- Raises the questions for FAQ and provides them to the AQR Provider PMO

Relationships:

- Reports to the AQR PMO

3. AQR Provider QA

Accountabilities:

- Ensures an independent QA of the AQR templates prior to submission to BNB
- Executing the AQR accurately and within agreed timelines
- Working closely with the BNB QA per work block; note that the AQR Provider's QA team will not normally interact directly with the BNB QA Lead

Please refer to *WB-10: Quality Assurance and Progress Tracking* for further details.

Relationships:

- Reports to the AQR PMO
- Communicates with BNB QA regarding the results and activities subsequent to the QA

E: In-scope Bank

1. Bank PMO

Accountabilities:

- Main contact to the BNB Bank-specific PMO and the AQR Provider PMO
- Ensuring sufficient resources and internal coordination of Bank team work streams
- Ensuring timely reporting to the BNB Bank-specific PMO and timely delivery of required documentation, data and AQR templates in accordance with BNB's timeline and methodology

Relationships:

- Reports to the BNB Bank-specific PMO
- Communication with the AQR Provider PMO and the Bank teams per each work block
- Meets weekly with the BNB Bank-specific PMO and AQR Provider PMO

2. Bank team per work block

Accountabilities:

- Prepares all the requested documentation in accordance with the requests from BNB and the AQR Provider
- Ensures data quality and timely submission of AQR templates, which fall under responsibility of the Bank, to the AQR Provider team
- Provides timely status reporting to the Bank PMO
- Raises the methodological questions with the AQR Provider

Relationships:

- Reports to the Bank PMO
- Communicates directly to the AQR Provider per each of the work blocks

II. Project Management Office

1. Project Management Tool (PMO Tool)

A MS Excel based ‘PMO Tool’ has been developed for the purposes of this exercise which reflects the schedule for the phases, major activities, deliverables, and status and progress reporting. The PMO Tool will contain key project milestones and summarize the critical path schedule for the exercise.

Progress reporting of the PMO Tool for each in-scope bank

The PMO Tool will be available to all AQR Provider PMOs upon commencement of the exercise. For the application of the PMO Tool, input is required by the BNB Central PMO, BNB Bank-specific PMOs, and the AQR Provider PMOs, however the responsibility for taking decisions will be of the BNB’s Central PMO.

Upon commencement of the exercise, the AQR Providers for each bank will report weekly progress through the PMO Tool, by submitting weekly updates of the tool to the Bank-specific PMOs. Weekly updates of the PMO tool will be reviewed by the Bank-specific PMOs and by the Central PMO, who will report progress to the Supervisory Board.

2. Frequently asked questions (FAQ)²

Central PMO will make the FAQ template available to the AQR Providers. The questions log will be used for technical methodology-related questions. Questions shall be reviewed and addressed within reasonable timeframe. It is envisioned that answers are made available to all AQR Providers at the earliest time possible or at least on a weekly basis.

- I. In cases in-scope bank teams need guidance, Bank PMO shall compile all inquiries and communicate those to the AQR PMO.
 - 1. AQR PMO shall independently address the inquiries.
 - 1.1 AQR PMO shall consult with relevant AQR QA experts and provide answer to in-scope Bank team in case point 1 is not possible.
 - 1.2 In case of higher complexity of the inquiries, AQR PMO is to include the inquiries in the FAQ template and send it to the BNB bank-specific PMO
 - 2. Inquiries which cannot be addressed independently by the BNB bank-specific PMO, should be escalated to the CPMO for guidance.
 - 3. Inquiries which cannot be addressed independently by the CPMO, should be communicated to the Technical Team.
 - 4. Answers to the FAQs shall be provided through the following communication channels:
 - CPMO and Technical Team publishes ongoing updates to the FAQ list which is available to all stakeholders.
 - CPMO publishes clarifications to the methodology.
- II. In cases AQR Provider teams per workblock need guidance, they shall communicate with relevant AQR QA leads.
 - 1. Inquiries which cannot be addressed by the AQR QA leads shall be included in the FAQ template and sent to the BNB bank-specific PMO by the AQR PMO.

Subsequent inquiries processing follows the escalation procedures described in points 2, 3 and 4 above.

² FAQs and responses to be transmitted in the English language.

2. Issue logs

Any issues identified by the AQR Providers will be logged in an issue log along with proposed remediation. Proposed remediation will be reviewed by the BNB Bank-specific PMO and discussed further with the CPMO. BNB CPMO and the Supervisory Board make the final decision on remediation and documented remedial action shall be followed by the AQR Provider. In certain cases where issues are seen by the BNB to put either the quality process or the timely execution of the AQR at risk, such action may be binding. It is the responsibility of the AQR Providers to ensure the issue log is updated.

In case inquiries are related to AQR logistics and Project management, the Bank PMO is to communicate those directly to the BNB bank-specific PMO.

In case any issues are identified by the AQR Provider, those shall be listed in the Issue log template along with proposed remediation by the AQR PMO.

1. The issue log shall be reviewed by the BNB bank-specific PMO and discussed with CPMO.
2. CPMO shall either approve the remedial actions or escalate the issue to the Supervisory Board.
3. Answer shall be provided within the Issue log. Remedial actions are binding to the AQR Provider.

AQR Circular No. 1

12 February 2016

This document provides initial guidance clarifications to the Manual for the purposes of conducting the review of the Bulgarian banking system.

The clarifications include:

- amendments to the risk-based portfolio selection which reflect the BNB's understanding of the structural specifics of the banking system and the available supervisory data, and*
- direct references to the performance of the AQR as outlined in the Manual*

For the purpose of this exercise any references in the Manual to:

- portfolio segments and risk strata should take into account the amendments to risk-based portfolio selection under the proposed sampling approach (p.10 of this document)*
- reference dates should be interpreted in line with the timeline of this exercise*
- National Competent Authorities (NCA) in the context of providing guidance and support to third parties engaged in the AQR process and communicating to the banks should be interpreted as the Bulgarian National Bank (BNB)*
- NCA bank teams should be read as AQR Provider teams*

The AQR shall be carried out based on a set of predefined templates for each of the outlined workblocks. Throughout this document, and indirectly by way of references to the Manual, the template coding follows the ECB naming. The applicable templates for this exercise will follow a different naming convention but their structure and content will essentially remain unaltered. The templates will be provided by the BNB upon commencement of the exercise.

WB-1: Policies, processes and accounting review (PP&A)

The PP&A review will be carried out as per the Manual, while taking into consideration compliance with local reporting guidelines for supervisory purposes³ within the timeline provided below. The key things to be covered with this workblock include provisioning approach; treatment of non-performing exposures (NPEs) and forbearance etc. There may be quantitative outcomes from the PP&A review that affect the AQR-adjusted CET1% capital.

Deadline

Task	Start date	End date
Classification of financial instruments	15-Feb	19-Feb
Application of fair value hierarchy (IFRS 13)	15-Feb	19-Feb
NPL / forbearance definition (EBA)	15-Feb	26-Feb
Forbearance & restructuring - policies, definitions, tracking	15-Feb	26-Feb

³ Supervisory reporting as per Regulation 573/2013 and 680/2014

Task	Start date	End date
Provisioning – policies, processes, definitions, triggers, calculations	15-Feb	26-Feb
Collateral values and governance policies including REO disposals	15-Feb	26-Feb
Credit valuation adjustments for derivatives – existence, use, coverage (including, if required, CET1% adjustment)	15-Feb	26-Feb
Connected client ID and country of ultimate borrower ID policies	15-Feb	26-Feb
BS deconsolidation processes and policies	15-Feb	19-Feb
Policy for litigation reserves	15-Feb	19-Feb
Interim submission of BNB T1 ⁴		19-Feb
Final submission of BNB T1		26-Feb
Interim submission of BNB O1B		26-Feb
Final submission of BNB O1B		2-Mar
Final submission of Bank CVA challenger model		15-Apr
Final submission of Provider CVA challenger model		28-Apr
QA review by BNB QA Team	15-Feb	28-Apr

WB-2 Loan tape creation and Data Integrity Validation (DIV)

The loan tape creation and DIV will be carried out as per the Manual. Currency in fields shall be in thousand Bulgarian leva (BGN'000) and reference dates 31 December 2014 and 31 December 2015.

Reference is made to the following mapping of data field information from the Manual to the in-scope portfolio segments as per the proposed portfolio segmentation.

Clarification on exposure definitions for the purposes of loan tape completion and mapping of the exposures within the in-scope portfolio segments based on loan tape field "S_AQRASF" will be provided together with the templates to be used in the process.

Portfolio Segments	Asset class from loan tape (by field "S_AQRASF")
1. Corporate	<i>Non-retail exposures: Debtor, Facility & Collateral tape (.csv file)</i> Large corporates, Project finance, Shipping, Aviation, State owned enterprises, Commercial Real Estate (CRE), CRE Development, CRE Income producing, Other real estate, Regional governments and local authorities
2. SME	<i>Non-retail exposures: Debtor, Facility, Collateral tape (.csv file)</i> Large SMEs
3. Retail Mortgage	<i>Retail mortgage (RRE) (.csv file)</i> RRE Owner Occupier, RRE Buy to let, Other RRE
4. Retail Other <i>(excluded from Sampling)</i>	<i>Other retail exposures (.csv file)</i> Credit cards, Overdrafts, Non-revolving unsecured credit, Other secured loans, Other, Other Retail, Revolving, Retail SME

⁴ For definitions on templates, see p. 23

Further clarifications with regards to technical implementation of the above portfolio segmentations will be provided together with the templates to be used in the process.

Deadline

Task	Start date	End date
Check on quality of loan tape collation. BNB Bank team to review codes used in loan tape	15-Feb	2-Mar
Delivery of first version of loan tapes		18-Feb
Verification of bank transposition code and check totals by segment	15-Feb	4-Mar
Spot checks on relevant exposures out of scope of Phase 2	22-Feb	10-Mar
Field specific checks	22-Feb	11-Mar
Cross field checks	22-Feb	11-Mar
Distribution checks	22-Feb	11-Mar
Remediation Strategy	14-Mar	18-Mar
Data set available for sample selection		18-Mar
Weekly interim submission of BNB T2B	19-Feb	11-Mar
Final submission of BNB T2B		18-Mar
Interim submission of BNB O2B	11-Mar	17-Mar
Final submission of BNB O2B		18-Mar
QA review by BNB QA Team	15-Feb	18-Mar

WB-3: Sampling

This section provides guidance with respect to the risk-based portfolio selection. It defines the portfolio segmentation and risk strata, the corresponding sampling procedure, and the selection of credit files for review.

The proposed amendments represent a principle change to the Manual sampling approach. Underlying the amendment is the supervisory knowledge of the banking sector including its size, the risk-weighted assets of the constituent banks, the existing risk management and lending practices, and the supervisory reporting requirements. The amendments are made to ensure the timely and effective execution of this project while maintaining the core ECB principles.

The performance of other AQR workblocks should take into account the approach described herein.

The proposed sampling approach is based on statistical techniques aiming at a level of assurance of 90% and is compliant with international auditing standards. The sampling methodology produces a sample size in proportion to the scale of the Bulgarian banking system, which is sufficient to draw conclusions about the population of the asset classes under review.

The section includes certain restatements from the Manual to facilitate the understanding of the proposed approach.

Tiering of banks

The BNB introduces the following tiering of the banks for the purpose of the AQR exercise, based upon size and complexity of individual banks:

- Tier 1: UniCredit Bulbank, DSK Bank, First Investment Bank, United Bulgarian Bank, Raiffeisenbank (Bulgaria), Societe Generale Expressbank, Eurobank Bulgaria, Central Cooperative Bank
- Tier 2: Piraeus Bank Bulgaria, Cibank, Allianz Bank Bulgaria, Investbank, Bulgarian Development Bank, ProCredit Bank (Bulgaria), Municipal Bank, International Asset Bank
- Tier 3: Bulgarian-American Credit Bank, D Commerce Bank, TBI Bank, Tokuda Bank, Victoria Commercial Bank, Texim Bank

The tiering will influence the calculation of the sample size and any potential adjustments to it, to ensure the appropriate level of review.

1. Portfolios under review and excluded exposures

The portfolios under review comprise of the segments defined in the Table under WB-2:

- Corporate portfolio
- SME portfolio
- Retail Mortgage

All Retail other exposures and SMEs treated as retail according to the banks policies (standardized products which are subject to a collective provisioning approach) are specifically excluded from the sampling, but will be subject to collective provisioning analysis.

Also excluded from the sampling are the following exposures:

- Low-risk exposures – $\text{Debt/EBITDA}^5 < 1$ and/or $\text{Equity/Assets} > 50\%$ based on the audited financial statements as at 31.12.2014.
- Exposures, which are provisioned at more than 95% as at the respective review date.

1.1. Targeted approach exposures

Targeted approach shall be applied to selected exposures deemed to have a higher risk of accounting misstatement within lower risk portfolios. The scope of these selections of exposures will be bank-specific, defined by the Central Project Management Office (CPMO).

The results of the review of the targeted exposures will not be taken under consideration for the extrapolation of the CFR results. However if a targeted exposure appears in the random sample, it should count for extrapolation purposes. If a targeted exposure appears in top 10 it should count for top 10 set from the respective portfolio.

⁵ Where Debt = Total interest-bearing debt of the borrower; EBITDA = Earnings Before Interest, Tax, Depreciation and Amortisation

1.1.1. Identification of the targeted subset of portfolio exposures

This subset will be provided by BNB at the beginning of the exercise. The indicative cap for the number of credit files to be reviewed as a targeted subset is 40 distinct debtors.

1.1.2. Related party exposures (Art. 45 of the Law on Credit Institutions)

The AQR Providers shall be required to review exposures with regards to related party exposures (defined as related to the Bank, the management or the shareholders). The AQR Provider, using publicly-available sources, will challenge the identified related parties.

1.2. Group of connected clients (Art.4, Para.39, Regulation 575/2013)

The AQR Providers shall be required to review exposures with regards to group of connected clients across the portfolios under review. If the AQR Provider identifies flags in the randomly selected borrower that the reviewed exposure is connected to other borrowers, the AQR Provider will be required to review other connected material exposures subject to a minimum of 2 exposures of the highest size (on a net basis) in the group of connected clients. The AQR Provider, using publicly-available sources, will challenge the identified groups of connected clients.

1.3. Specialized assets

The AQR Providers may be required to review assets, which follow under the below segmentation:

- Level 3 bonds
- Level 3 securitizations
- Participations and individual private equity investments
- Held real estate
- Fair value loans
- Foreclosed assets

The above does not apply, in the event where the size of those assets is considered immaterial compared to the net book value (NBV) of the bank's total assets, or when these are absent from the bank's portfolio. The BNB will decide on the materiality thresholds for those assets.

2. Sampling procedure

For each of the described portfolios in scope, the following sampling procedure shall be applied:

Portfolio segment: Corporate; SMEs; Retail Mortgage (RRE)	Random sample (Monetary Unit Sampling)	Top 10 Exposures⁶ (by size)
Performing exposures (PE) (<30days past due (DPD)) – normal risk⁷	According to Sampling matrix	10
Performing exposures <u>High Risk</u> (PE HR) (in arrears 30-90 days; with signs of deteriorating financial position; forborne exposures) – significant risk⁷	According to Sampling matrix	10
Non-performing exposures (NPE⁸) (>90 days past due (DPD) or internal NPE definition or borrower unlikely to pay⁹ – significant risk⁷	According to Sampling matrix	10

2.1. High Risk is defined as follows:

Internal PE and days past due (DPD) < 90 and any of the following apply:

- DPD > 30
- Watch list = Y;
- Loan/income >500% for retail mortgage (where available);
- Forborne⁷ = Y;
- Current status flag ≠ *Default* and NPE in the last 12 months = Y;
- Related party = Y;

Materiality threshold as per Art. 28, BNB Ordinance No.7 shall be taken into account.

2.2. Monetary Unit Sampling

The statistical method for debtor selection is the Monetary Unit Sampling (MUS). It is a suggested process as per ISA 530. The results derived from the statistical sampling tool shall be used for extrapolation to the risk-weighted assets allocated within the corresponding strata.

Inputs needed to use MUS:

- Random starting point;
- Population; and
- Sample size, which depends on:
 - Population;
 - Materiality threshold; and
 - Risk profile.

⁶ Exposure is defined as per Manual – on non-retail at debtor level, and on retail on facility level, net.

⁷ Normal and Significant risk taxonomy for sample size calculation see Sample matrix, p. 18.

⁸ As per EC Regulation 680/2014 on Supervisory reporting

⁹ Art. 178 from Regulation 575/2013

3. Steps to calculate the sample size

3.1. Determine Performance Materiality (PM)

For the purpose of the AQR, the performance materiality is set at 1% of the total net exposure¹⁰ of the respective portfolio segment, i.e. Corporate, SME, and Retail Mortgage (RRE). The materiality threshold in absolute value represents the size of the maximum acceptable error to the aggregate provisioning of the portfolio segment under review.

3.2. Calculation of the Population-to-PM ratio (multiple factor)

Select the top 10 borrowers¹¹ from each risk stratum of the three portfolio segments and exclude their aggregate exposure from the risk stratum exposure. Also exclude:

- Sub-segments with strong evidence of low debtor risk – debtors with Debt/EBITDA < 1 and/or Equity/Assets > 50% based on the audited financial information as at 31.12.2014.
- Exposures, which are provisioned at more than 95% as at the respective review date.

The reduced stratum exposure is divided by the performance materiality value to determine the multiple factor, which in turn determines the size of the random sample, based on the sample matrix below. For populations in between the listed levels of multiple factors, sample size shall be interpolated.

Example: Corporate portfolio segment

Step 1		(BGN'000)		(BGN'000)	(BGN'000)	Factor ¹
Risk stratum	Exposure prior Top 10		less	Top 10 exposure	Risk stratum exposure	
PE	300,000			100,000	200,000	44.4
High-Risk	100,000			40,000	60,000	13.3
NPE	50,000			20,000	30,000	6.7
Aggregate segment exposure		450,000				
PM (%)		1%				
PM (BGN'000)		4,500				

Step 2

Step 3

Step 4

Step 5

Step 5: Calculation of Multiple Factor: Divide stratum exposure under Step 4 by PM (BGN'000)

¹⁰ Net exposure is defined as aggregate portfolio segment exposure after impairment

¹¹ As the tape for retail mortgages is collected at the facility level, throughout the description of the sampling process “debtor” or “borrower” should be read as “facility loan” for retail mortgages.

Table: Sample matrix

PM Factor	Sample size Normal Risk	Sample size Significant Risk
0	0	0
1	2	3
2	3	6
3	5	9
4	6	12
5	8	15
6	9	18
7	11	21
8	12	24
9	14	27
10	15	30
15	23	45
20	30	60
25	38	75
30	45	75
40	60	75
50	75	75
100	75	75

3.3. Quality assurance of the debtor selection process

After defining the number of the of loan files to be sampled from each riskiness strata, in order to reproduce the results of the random sampling a pseudorandom number generator with an arbitrary initial state shall be used. The random generator shall be started from an arbitrary initial state using a seed state. The CPMO shall provide a randomly selected seed for each bank to the corresponding AQR Providers to be used in their sampling tool.

The sampling bucket shall be ordered by Debtor ID in ascending order and imported in the Monetary Sampling Tool. If the MUS selects an exposure twice, the selected exposure will be counted once, thus decreasing the sample size in this stratum. Each AQR provider shall communicate to the BNB the list of selected debtors. In order to validate the random selection of files to be reviewed, the CPMO shall run the MUS tool with the same predefined starting point, order of the debtors.

3.4. Selecting a reserve sample

A reserve sample shall be selected in order to allow for replacement of files. The calculation of the reserve sample size is a parallel step to the calculation of the main sample size and is performed as per Section 3.5.5 of the Manual. The data required is the same as for the main sample and that the reserve sample will be calculated right after the main sample size has been calculated.

The reserve sample, when combined with the actual sample, can never be more than the total number of debtors in the stratum. Given “N” debtors per strata and a main sample size of “n*”, the reserve sample size is calculated using the following expression:

$$R = \min (n^*, N - n^*)$$

3.5. Adjustment to sample size

Sample size may be increased in cases of uncertainty around the quality of data during the Sample Selection process. The BNB shall communicate clarifications regarding adjustment to sample size due to failure in DIV checks.

Material misclassification of exposures may result in substantive testing with target coverage to be communicated by the BNB in the course of the AQR process.

Deadline

Task	Start date	End date
BNB to provide list of Targeted exposures		15-Feb
Availability of scripts/tools		14-Mar
Preparation of in scope portfolios	21-Mar	25-Mar
Sample size calculation and selection	21-Mar	25-Mar
Interim submission of BNB T3		25-Mar
Validation of selection by BNB		28-Mar
Review of adequacy vs. DIV	25-Mar	28-Mar
Final submission of BNB T3		28-Mar
QA review by BNB QA Team	14-Mar	28-Mar

WB-4 Credit file review (CFR)

The CFR review will be carried out as per the Manual taking into consideration the proposed amendments to portfolio segments and risk strata. Therefore, CFR procedures in the Manual shall be read in the context of the proposed guidance herein under WB-3: *Sampling*. Activities are to be carried out within the following timeline.

Deadline

Task	Start date	End date
BNB to provide list of Targeted exposures		15-Feb
CFR Preparation - Targeted exposures	15-Feb	19-Feb
CFR Preparation - Priority group draft	29-Feb	4-Mar
CFR Preparation - Random group final	28-Mar	1-Apr
Classification Review - Targeted exposures	22-Feb	2-Mar
Classification Review - Priority sample	7-Mar	18-Mar
Classification Review - Random sample	5-Apr	5-May
Impairment Review - Targeted exposures	29-Feb	25-Mar
Impairment Review - Priority sample	14-Mar	1-Apr
Impairment Review - Random sample	11-Apr	20-May
Weekly interim submission of BNB T4B	2-Mar	20-May
Final submission of BNB T4B		27-May
QA review by BNB QA Team	15-Feb	27-May

WB-5: Collateral and Real Estate valuation

The Collateral and Real Estate valuation will be carried out as per the Manual. For the avoidance of doubt:

- All physical assets should be valued on the basis of market value;
- Replacement cost is not an acceptable valuation method;
- The AQR Providers should examine the documentary completeness, rigorousness and realism of the assumptions, and general compliance with the independent valuation process;
- Re-appraisal of collateral and foreclosed assets will not be required if the asset in question has been appraised by an independent, external party using a market value approach in the 12-month period ending 31 December, 2015;
- The BNB reserves the right to request a review by an external law firm if doubts emerge during WB-4 and WB-5.

The collateral and real estate valuations will be challenged, in line with available benchmarks and for consistency across the process.

Deadline

Task	Start date	End date
Collateral information passed to appraisers	25-Feb	5-May
Agree on valuation methodologies, assumptions and final template		26-Feb
Revaluation of balance sheet items		
Revaluation of collateral for targeted exposures	23-Feb	23-Mar
Revaluation of collateral for priority groups	8-Mar	30-Mar
Revaluation of collateral for random sample	6-Apr	18-May
Weekly interim submission of BNB T5	26-Feb	13-May
Final submission of BNB T5		18-May
QA review by BNB QA Team	25-Feb	18-May

WB-6: Projection of findings

The projection of findings analysis will be carried out as per the Manual taking into consideration the proposed amendments to portfolio segments and risk strata. Therefore, projection of findings procedures in the Manual should be read in the context of the proposed guidance herein under WB-3: *Sampling*. Activities are to be carried out within the following timeline.

Deadline

Task	Start date	End date
Projection of findings process	30-May	3-Jun
Assessment of results and selection of anomalies	30-May	10-Jun
Final submission of BNB T6		10-Jun
QA review by BNB QA Team	30-May	10-Jun

WB-7: Collective provision analysis

The Collective provision analysis will be carried out as per the Manual. The provisioning analysis is undertaken to verify that the collective provisioning models of the bank comply with the relevant accounting rules and to check if the existing provisioning levels are appropriate or they require adjustment.

For the avoidance of doubt, each AQR Provider is to apply its own challenger model which shall be validated by the BNB. The “challenger model” will follow the generalized form described as per WB-7 of the AQR Manual, and the BNB will provide quality assurance on model assumptions and results. In order for the BNB to obtain reasonable assurance that parameters have been determined in line with the AQR methodology, each provider should report the progress regularly.

Sub-segmentation of portfolios by product, loan-to-value (LTV), channel, and risk should be done with 2014 data except for the cases in which the data for 2014 are missing. In these cases, 2015 data can be used for sub-segmentation. Please note that 2014 is used for segmentation, whereas 2015 will be used for applying the calculation.

Risk-based sub-segmentation should be applied according to the guidance in WB-3: *Sampling*. Non-retail exposure should be segmented by internal rating.

The challenger model only applies to performing and non-performing retail exposures and to performing non-retail exposures. For retail portfolios, specific and collective provisions (allocated debtor level sum of P_IBNRD and P_SPECD) should be compared. For non-retail the challenger model only covers non-specifically impaired exposures so only these need to be compared. Non-retail asset classes used in the credit file review workblock will be subject to the challenger model. The challenger model will be calibrated on the bank’s own data.

Additional data required as input for the challenger model may include the following:

- W/OLIST – List of all exposures with write-offs or foreclosures in the last 12 months as at Dec 2015
- Information required on all foreclosure cases in the last 36 months:
 - Sales proceeds
 - Last appraisal value,
 - Date of appraisal
 - Date of sale
 - Costs incurred in sale

If sufficient data is not available to populate the models BNB will provide prudent assumptions which will be used.

Deadline

Task	Start date	End date
Review of Bank's model	29-Feb	11-Mar
Receive additional information		18-Mar
First cut model (without CFR adjustments)	21-Mar	8-Apr
Model parameters adjusted by CFR findings	13-Jun	24-Jun
PI,CR,LGL,LGI parameters for use in stress test		24-Jun
Interim submission of BNB O7B	17-Jun	22-Jun
Final submission of BNB O7B		24-Jun

Task	Start date	End date
Weekly interim submission of BNB T7	25-Mar	17-Jun
Final submission of BNB T7		24-Jun
QA review by BNB QA Team	29-Feb	24-Jun

WB-8: Level 3 Fair value exposures

The AQR Providers may be required to review Level 3 exposures. Additional guidance on this workblock will come in the appropriate time.

Deadline

Task	Start date	End date
To be defined		

WB-9: CET 1%

The CET 1% review will be carried out as per Manual. Activities are to be carried out within the following timeline.

Deadline

Task	Start date	End date
Obtain bank CET1% param. and validate all cap. requirements according to CRR/CRD IV	14-Mar	25-Mar
Obtain all inputs necessary to populate template		27-Jun
Undergo CET1 adjustments process	27-Jun	1-Jul
Interim submission of BNB T9		1-Jul
Final submission of BNB T9		8-Jul
Interim submission of BNB O9B	8-Jul	13-Jul
Final submission of BNB O9B		15-Jul
QA review by BNB QA Team	14-Mar	15-Jul

WB-10: Quality Assurance and Progress Tracking

This chapter outlines the approach that will be taken to quality assurance (QA) and progress tracking. QA and progress tracking are two complementary processes whose joint goal is to ensure the accurate and timely delivery of the AQR in a standardized manner across all significant banks. Both processes will follow a three-level review model.

- The **AQR Provider’s QA team** (which shall be independent from the core AQR Provider team) form the first level of review being responsible for accurate and timely execution of the AQR in line with guidance issued by the BNB, escalating issues to the BNB central team as required.
- The **BNB QA per work block** form the second level of review, independently performing plausibility checks on the work of the AQR Provider’s QA team and closely monitoring progress, escalating issues to the CPMO as required.
- The **BNB QA Lead** forms the third level of review, reviewing and challenging the execution of the AQR, as well as providing a focused investigation of specific issues as required.

Progress tracking will be coordinated within the weekly PMO reporting process to minimize the additional effort required.

1. Summary of approach

Overview of progress tracking and QA structure

The BNB QA teams per work block perform plausibility and completeness checks on analysis, applying a “second level of review” for the AQR. This way, any undetected issues can be spotted preventing problems at a later stage of the exercise.

Both the QA and Progress Tracking will be carried out in some capacity at each of the 3 levels of review, with responsibilities detailed for each stakeholder in the following table.

Summary of responsibilities for QA and progress tracking

Stakeholder	QA	Progress Tracking	Stakeholder
BNB QA Lead	<ul style="list-style-type: none"> • Review and challenge the AQR process and results • Investigate specific issues as required and deemed appropriate by the BNB • Review outputs at a high level (i.e. portfolio level) for consistency across banks in the country 	<ul style="list-style-type: none"> • Co-ordination of the weekly CPMO reporting process • Aggregation of PMO tools for all in-scope banks 	CPMO
BNB QA per work block	<ul style="list-style-type: none"> • Perform plausibility checks on the output of the AQR Provider’s QA teams 	<ul style="list-style-type: none"> • Detailed planning of AQR Phase process for in-scope bank, across all workblocks • Co-ordination of interim progress reporting after validation from the BNB QA teams 	BNB Bank-specific PMO
AQR Provider QA team	<ul style="list-style-type: none"> • Ensure consistency and rigorousness of application of the AQR methodology • Raises all issues identified to the BNB via the QA issue log 	<ul style="list-style-type: none"> • Ensure execution of the AQR in a timely manner, in-line with plans and timelines agreed with the BNB 	AQR Provider PMO
AQR Provider team per work block	<ul style="list-style-type: none"> • Execute the AQR accurately in-line with the guidance issued by the BNB 	<ul style="list-style-type: none"> • Aggregation of input data from in-scope bank teams and AQR teams per work block followed by regular timely submission of templates 	AQR Provider PMO

- Neither the exact structure nor the exact approach the BNB should use for QA or Progress Tracking will be prescribed precisely in this manual; it is the responsibility of the BNB to ensure that the process it chooses to follow meets its responsibilities.
- The BNB QA Leads will be responsible for providing guidance on methodology via the Technical Team and performing centralized QA activities, such as cross-bank comparisons.
- At a minimum, the AQR Providers' QA teams should direct all information and communication during AQR Phase to the BNB bank teams through the relevant set of templates provided, as summarized in the following table.

Summary of templates used in communication between AQR Providers teams and BNB bank teams

Template	Purpose	Frequency of submission
PMO Tool	For use in the regular weekly BNB PMO reporting cycle	Weekly
FAQ templates	To record questions regarding interpretation of the AQR methodology	Every Tuesday, Thursday of the week
QA issue log	To record specific QA issues identified by the AQR Providers' QA teams	Every Tuesday
Output templates	To capture data submitted for each AQR Phase workblock	As per table below
QA Tool	To review the implementation of QA controls and checks performed by the AQR Providers' QA teams	Weekly
	To record all data inconsistencies, omissions, and errors encountered during the QA	

- Issues encountered during AQR Phase will be dealt with using a range of remedial actions, aimed at allowing the bank in question to complete the exercise on time and to the specified quality level.
- Actions proposed will be escalated to a commensurate level within the BNB and may include, for example, conservative assumptions or workarounds being applied, or re-execution of portions of the AQR where required.
- The following table provides guidance regarding the key basic checks that should be made with regards to each template to ensure they are filled out completely, before submission:

Workblock	Output	Key checks
1. Processes, policies and accounting review (PP&A review)	BNB T1 Processes, policies and accounting review assessment template	<ul style="list-style-type: none"> • All questions have been answered, with appropriate evidence available to justify answers
	BNB O1B PowerPoint presentation on all remediation activities required to be undertaken by the bank as a consequence of the PP&A review following the CA	<ul style="list-style-type: none"> • All issues identified either have a remediation activity described or a satisfactory explanation has been provided around why remediation is not required
2. Loan data tape creation and DIV	BNB T2B DIV monitoring template	<ul style="list-style-type: none"> • All checks have been performed • Remediation strategies have been defined for all relevant issues
	BNB O2B PowerPoint presentation describing any remedial action the bank should take as a result of DIV following CA	<ul style="list-style-type: none"> • All issues identified either have a remediation activity described or a satisfactory explanation has been provided around why remediation is not required

3. Sampling	BNB T3 Sampling rates template	<ul style="list-style-type: none"> • Data has been entered into sampling rates template correctly • Prescribed sampling rates have been applied accurately • Sample chosen reflects prescribed sampling rates for each stratum
4. Credit file review	BNB T4A Credit file review template BNB T4B Credit file review findings template	<ul style="list-style-type: none"> • Template is populated for all sampled Credit Files • Key metrics and multiples (e.g. cash flow multiples) aligned with AQR guidelines (or satisfactory explanation provided) • All issues identified either have a remediation activity described or a satisfactory explanation has been provided around why remediation is not required
5. Collateral and real estate valuation	BNB T5 Collateral and real estate valuation template	<ul style="list-style-type: none"> • Template is populated for all sampled Collateral and real estate • Valuation guidelines have been followed in full
6. Projection of findings	BNB T6 Projection of findings tool	<ul style="list-style-type: none"> • Findings from credit file review have been entered into tool accurately and projection of findings has been performed in line with rules of AQR for all relevant metrics
7. Collective provision analysis	BNB T7 Collective provisioning results template	<ul style="list-style-type: none"> • Template is fully populated for all required segments • Challenger models have been reviewed and found to be consistent with guidelines for AQR • Top down checks and benchmarking performed on parameters to ensure relationship between provisioning rates by segment is logical
8. Level 3 fair value exposures review	BNB O7B PowerPoint presentation describing any remedial action the bank should take as a result of Collective provision analysis BNB T8A Revaluation of non-derivative Level 3 assets findings template BNB T8A Revaluation of non-derivative Level 3 assets findings template	<ul style="list-style-type: none"> • All issues identified either have a remediation activity described or a satisfactory explanation has been provided around why remediation is not required • All sampled assets have been revalued in line with guidelines • Explanation provided for the choice of valuation • Findings have been extrapolated where appropriate (i.e. securitizations)

8. Level 3 fair value exposures review	<p>BNB T8B Core trading book processes review findings template</p> <p>BNB T8C Level 3 derivative pricing model review findings template</p> <p>BNB O8D PowerPoint presentation describing any remedial action the bank should take as a result of Level 3 fair value exposures review</p>	<ul style="list-style-type: none"> • All questions have been answered, with appropriate evidence available to justify answers • All questions have been answered, with appropriate evidence available to justify answers • Quantification of key issues has been made where appropriate • Any Level 3 non-derivative portfolio that requires wider revaluation has been identified • All issues with core processes or pricing models either have a remediation activity described or a satisfactory explanation has been provided around why remediation is not required • Clear statement has been provided of where derivative fair value reserves should be made, with appropriate evidence provided
9. AQR-adjusted CET1% ratio	<p>BNB T9 AQR-adjusted CET1% adjustment tool</p> <p>BNB O9B Draft letter to bank outlining actions that should be taken as a consequence of the AQR (referencing output O1B, O2B, O3B, O4B, O7B, O8D)</p>	<ul style="list-style-type: none"> • Template is populated accurately based on outputs of other templates, fully in line with accounting rules • Draft letter has been completed covering all relevant issues

2. Timeline for the QA process

The AQR Provider QA teams will be expected to have completed their own QA before final outputs are submitted to the BNB QA teams. If templates are submitted on an interim basis some degree of QA will have been expected to be carried out but may not be fully completed.