

**Application to adopt the advanced measurement approach for measuring banks'  
operational risk exposure**

## 1. Introduction

This document sets out the information to be submitted to the Office of the Registrar of Banks (this Office) of the South African Reserve Bank (SARB) by a bank, for permission to adopt the advanced measurement approach (AMA) for measuring banks' exposure for operational risk.

A duly completed application should contain as a minimum the following:

- 1.1 Responses to the various requests for information, which could include any additional information that this Office may require during the approval process.
- 1.2 The declarations and signatures form as per the requirements set out in section E below.

### Note

The submission of a signed application by an applicant bank confirms the applicant bank's consent that any information provided as part of the application can be shared with other regulators for the purposes of the approval process.

All information is to be submitted both in electronic format (via CD or USB drive) and hard copy.

## 2. Scope of application

The application process applies to all banks wishing to use the AMA to calculate their operational risk capital requirement.

In the event that the applicant bank envisages using a partial use AMA<sup>1</sup> to calculate its operational risk capital requirement for identified operations, the scope of this application will only apply to those group operations and not to the operations on an approach other than the AMA.

Where the applicant bank intends adopting a hybrid AMA,<sup>2</sup> one AMA model is, for example, used at a controlling company consolidated level with AMA capital being allocated to legal entities, thus meaning that the legal entities do not have standalone AMA models. In this case, applicant banks still need to complete the entire application pack.

Where applications are made by banks with international activities, this Office reserves the right to share the information contained in the application pack with other regulators as needed to support the approval process.

## 3. Stages of the application process

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<sup>1</sup> A partial use AMA indicates that a bank uses the AMA for some parts of its operations, and either the basic indicator approach (BIA) or the standardised approach (TSA) for the remainder of its operations, as envisaged in regulation 33(5) of the Regulations.

<sup>2</sup> A hybrid AMA entails the attribution of group operational risk capital to legal entities by means of an allocation mechanism as envisaged in regulation 33(9)(c) of the Regulations.

### 3.1 Stage 1 (comprising sections A-E below)

3.1.1 The first stage of the application process is the completion of the application pack, which requires the applicant bank to provide:

- 3.1.1.1 summary information on its plans for AMA implementation;
- 3.1.1.2 its approach in a number of key areas such as governance;
- 3.1.1.3 details on how it has met the AMA qualitative and quantitative requirements as contained in the Regulations and related directives and guidance notes; and
- 3.1.1.4 detailed information covering the specific details of the AMA model.

3.1.2 During this stage the application pack is to be signed off by the chief executive officer of the applicant bank. Information gathered from this stage will enable this Office to determine the scope of the supervisory review work with regard to the assessments of the applicant bank's AMA application. As such, the application pack should enable this Office to:

- 3.1.2.1 understand what work has been undertaken by the applicant bank and confirm that it has a credible strategy in its roll-out plan for complying with relevant legislation; and
- 3.1.2.2 identify, from an AMA perspective, the key areas of risk on which this Office's resources should focus.

3.1.3 For this first stage this Office requires high-level, summarised information. The type of information provided would broadly be at the same level as information provided to senior management or the board to give them an overview of a project.

This Office expects applicant banks to clearly highlight any material gaps identified against the regulatory framework,<sup>3</sup> which should include detailed reasons for non-compliance as well as initiatives/actions taken to address these gaps where appropriate. Moreover, this Office requests applicant banks to provide a list of all the relevant internal documents (with brief descriptions of their contents) that could be considered relevant to the application. This Office may request the applicant bank to submit copies of selected documents in the second stage of the approval process.

This Office anticipates that the answers to a number of questions may differ across business lines and regions in the case of internationally active banks. In these cases, this Office requires applicant banks to highlight these differences in their responses.

It may also be appropriate to distinguish between an applicant bank's current framework and its anticipated framework at implementation. Banks are thus requested to highlight this in the relevant questions.

An applicant bank should identify the links between the information provided in different sections and ensure that this information is relatively straightforward to reconcile. For example, given that there are links between the roll-out plan in section A and the self-assessment gap analysis in section B, this Office expects information contained in these two sections to be reconcilable.

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<sup>3</sup> The regulatory framework includes the Banks Act, the Regulations and relevant directives and guidance notes.

## **3.2 Stage 2**

3.2.1 During stage 2, this Office may request further detailed information on particular topics based on its review of all information received during stage 1. This Office expects that most of this information will already be contained in internal documents and can therefore be delivered quickly.

This Office has the right to undertake on-site visits to applicant banks as part of its follow-up work where deemed necessary. If this Office considers the findings to be satisfactory and consistent with the information already supplied to it, it may assume that other areas not reviewed in detail are of a similar standard and as such can rely on the applicant bank's senior management to reflect the particulars for the application. However, if this Office identifies concerns, further review work may be conducted or ultimately the application could be declined, depending on the severity and scale of the concerns identified.

3.2.2 Applicant banks need to be aware of the following administrative arrangements designed to allow this Office to deal with applications efficiently:

3.2.2.1 Information requested from applicant banks is expected to be provided within a reasonable time frame as specified by this Office. Should the information requested by this Office not be provided timeously, it could result in a delay in the processing of the application.

3.2.2.2 It is important to note that the information requested is for the application process only. Information that will be required on an ongoing basis, which may be similar to the information requested in this application, will be discussed and specified separately through various platforms, for example during on-site reviews.

## **4 Section A: High-level overview and implementation plans**

The information requested is to provide this Office with a high-level overview of the applicant bank's AMA application and implementation plans.

### **4.1 General**

A1. A summary of the rationale for the application.

A2. A brief explanation of the scope of application, including but not limited to:

- entities covered/rationale for partial use (if any);
- explanation and rationale for omissions from the AMA application;
- a list of significant subsidiaries including the current and proposed operational risk measurement approach (whether a stand-alone AMA, allocation from the group model or a simpler approach); and
- details of planned significant changes to the structure or organisation in future which could affect the application.

A3. Whether the application is for solo or consolidated use.

A4. A list of entities within the consolidated group.

- A5. If consolidation by aggregation is being utilised, please provide the details of the foreign approval on which the aggregation is based.
- A6. A copy of the AMA roll-out plan, which should include the planned roll-out timelines of the AMA approach in a Gantt chart or any similar manner which clearly sets out the roll-out plan and timelines. Where relevant, the AMA model roll-out for material offshore subsidiaries should be included.
- A7. Contact particulars of the person in the applicant bank with regard to the AMA application.

## **4.2 Structure**

The information requested in this section aims to furnish this Office with details on the structure of the applicant bank from an operational risk management and capital allocation perspective. The explanation on the structure of the applicant bank should cover as a minimum the following:

- A8. The organisational design of the group, including business lines and control functions.
- A9. A description of the group and legal entity structures.
- A10. The organisation of business units and reporting lines.
- A11. Explanation of how the AMA implementation is organised with respect to the division of responsibilities and capacity allocated.
- A12. An overview of the management committee structure.
- A13. The role of internal audit.
- A14. The role of external audit.
- A15. The role of independent third parties, if applicable.
- A16. The regulatory structure of the group – home regulator and other relevant regulators.
- A17. The reporting structures. This should include an explanation of how and with what frequency will operational risk-specific project management structures and committees report upwards to risk management, internal audit and board functions.
- A18. A list of the key documents relevant to the AMA, including a brief description of their contents and last update date.
- A19. An outline of any significant changes planned.

## **5. Section B: Overview of the applicant bank's own self-assessment against relevant standards**

- 5.1 The information requested in this section is designed to provide this Office with an overview of the applicant bank's own self-assessment conducted against the AMA minimum standards. This Office proposes to take the comprehensiveness and quality of the work undertaken as part of the self-assessment into account when scoping the supervisory review work.
- 5.2 This Office expects that as part of stage 1 as explained above applicant banks will produce evidence to demonstrate that it has met the required AMA minimum requirements according to the relevant requirements specified in regulations 33, 34 and 39 of the Regulations.

This Office recommends that applicant banks initially submit the following completed annexures with regard to the work undertaken to meet the AMA qualifying criteria:

- B1. Confirmation that self-assessments have taken place and been reviewed by signatory.
- Annexure B – Operational risk self-assessment template.
  - Annexure C – Principles for the Sound Management of Operational Risk<sup>4</sup> template.
  - Annexure D – Supervisory Guidelines for the Advanced Measurement Approaches<sup>5</sup> template.
- B2. A brief description of the self-assessment processes applicant banks have undertaken, including how self-assessments against each relevant qualitative and quantitative standard were carried out, and details of any parallel runs undertaken prior to the application, including the results and remedial actions taken for unsatisfactory performance against the relevant standard. This section should also include a description of the governance processes followed in terms of completion of the self-assessments.
- B3. Exception-based results of self-assessments, including an indication of the applicant bank's view of materiality. Outline the steps being taken by the applicant bank to comply with relevant principles and when it expects that these steps will have been completed.

## **6. Section C: Summary of the applicant bank's approach in a number of key areas**

This section is designed to give this Office a summary of the applicant bank's approach in a number of key areas including, but not limited to, governance, use and validation of the AMA. This Office is of the opinion that an applicant bank's approach in these areas will be important in determining whether the AMA application is ultimately approved. These are areas that this Office intends to pay particular attention to in its supervisory review work; however, this could be expanded to focus on additional areas if this Office considers it necessary.

### **6.1 Governance**

In section A, this Office requested high-level information on the applicant bank's governance of operational risk. In this section, this Office requires applicant banks to

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<sup>4</sup> Available at <http://www.bis.org/publ195.htm>.

<sup>5</sup> Available at <http://www.bis.org/publ196.htm>.

provide more granular information on operational risk governance. Information to be submitted should include:

- C1. A summary of the applicant bank's approach to the governance of operational risk, including approval of the AMA model and model changes.
- C2. A brief explanation of the role of the board (it should be made clear where the board delegates authority to a sub-committee or executive management).
- C3. A brief explanation of the role of the operational risk management function and how its independence is ensured; the role of the audit/risk committee; the role more generally of senior management in operational risk management; and the role of internal and external audit.
- C4. A brief explanation of reporting structures (including how and the frequency with which operational risk committees report upwards to risk management, internal audit and board functions).
- C5. A brief explanation of the nature and extent of management information produced at each level within the organisation. Applicant banks should be able to provide a description and example of high-level management information that is produced, including that produced by the AMA model. Applicant banks should also explain how the nature and content of the management information is determined and reviewed, and describe how the management information is assessed as relevant on an ongoing basis.
- C6. A brief overview of the operational risk decision-making process and how it works in practice at different levels within the applicant bank.

## **6.2 Overview of internal audit's involvement**

This Office regards internal audit's involvement in the implementation of AMA as crucial. The application should hence provide a detailed description of internal audit's tasks relating to AMA. The information on the role of internal audit should at a minimum include:

- C7. The tasks, responsibilities and independence of internal audit.
- C8. A description of and motivation for the audit approach and the audit plan.
- C9. Details on the available capacity for audit tasks.
- C10. An overview of the audit examinations of the progress of the AMA implementation, roll-out and compliance with relevant (proposed) legislation, and the allocation of a rating according to the applicant bank's internal measurement system.
- C11. An overview of all unresolved high-risk issues (as per the applicant bank's internal definition), including action plans and expected timelines to resolve them.

## **6.3 Requirement for use of AMA**

- C12. Applicant banks should explain how it meets the use-test requirement and provide assurance to this Office that its internal operational risk measurement system is appropriately integrated into its day-to-day risk management processes.

C13. Describe briefly the infrastructure an applicant bank has put in place to support the AMA framework. The description should cover information technology, skills and resources, organisational culture, testing and signing off of new systems, and any other areas deemed relevant by the applicant bank.

#### **6.4 Data management and integrity – compliance with AMA standards**

This section requires the applicant bank to explain its approach to data management. The following should be provided:

C14. A summary of the applicant bank's approach to the collection and management of each of the four data elements. This summary should include a diagram of the data architecture covering the collection and storage of data.

C15. A brief description of the data standards adopted (including any variations in data standards across and/or within the four data elements<sup>6</sup> and over time); an indication of how these standards are met; and in particular an assessment of how the standards ensure the accuracy, completeness and appropriateness of the data underlying the applicant bank's regulatory capital calculations.

#### **6.5 IT components (systems, platforms, network components)**

The applicant bank should clarify its policy in relation to the IT components that will be used in the AMA. It should submit the following as a minimum requirement:

C16. A diagram of the centralised and decentralised IT architecture.

C17. The classification of the IT components relating to confidentiality, integrity and availability.

#### **6.6 Operational risk boundary events**

##### **6.6.1 Operational risk losses related to credit risk**

Banks should be able to flag operational risk losses related to credit risk. These losses should not be taken into account for calculating the minimum required capital for operational risk, but actively used in the management of operational risk in all areas of the bank.

C18. For the purposes of internal operational risk management, demonstrate how operational risk that is related to credit risk is identified, assessed, monitored and controlled/mitigated.

##### **6.6.2 Operational risk losses related to market risk**

Banks should be able to flag operational risk losses related to market risk. These losses should be taken into account for calculating the minimum required capital for operational risk, and actively used in the management of operational risk in all areas of the bank.

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<sup>6</sup> The four data elements include internal data, external data, scenario analysis, business environment and internal control factors.

C19. For the purposes of internal operational risk management, demonstrate how operational risk that is related to market risk is identified, assessed, monitored and controlled/mitigated.

## **6.7 Validation**

A brief explanation of the applicant bank's approach to model validation. This should include:

C20. Description of how the applicant bank monitors the performance and robustness of the operational risk measurement system, including what level of performance and/or robustness measures will trigger the need to make modifications to the system.

C21. Description of the qualitative and statistical validation techniques and procedures.

C22. Description of the model validation process, including aspects such as independence, responsibilities of the various stakeholders, scope of validation, and the internal policies and procedures relating to the validation process.

C23. The involvement of internal audit, other internal parties, and external parties in the validation of the measurement system.

C24. The results of the last validation, the internally defined thresholds and, in the event of breaches against these thresholds, a detailed description including the background, cause, actions and associated timelines to resolve these.

## **6.8 Documentation**

As part of the application process, the applicant bank needs to submit documentation relevant to the application. This information should be accurate, sufficient and comprehensive.

C24. A list of all the key and supporting operational risk documents the applicant bank holds that it considers relevant to the application, including a brief description of their contents. Examples of the internal documents to be provided include, *inter alia*, the operational risk governance standard, the operational risk framework and the incident management policy.

## **7. Section D: Details of the advanced measurement approach model being used by the applicant bank**

This section requires applicant banks to provide further detail on the AMA model and the methodology employed:

D1. The model development documentation (including methodology and results).

### **7.1 A brief overview and explanation of the model**

The following should be submitted to this Office:

D2. Description of the process of developing the model, the parties involved and their responsibilities, and the related internal policies and procedure documentation.

- D3. A brief description of the model approach, including the high-level process flow of all the major modelling steps. This includes, but is not limited to, assimilation of data, development of operational risk categories, combining data sources, aggregation techniques and correlation assumptions.
- D4. An indication of whether the methodology applied in the model is identical across the business or whether it varies across, or depends upon, the business lines. If it depends on the business lines, applicant banks are required to explain this.
- D5. An explanation of which operations and/or operational risks are covered by the methodology, or, if multiple models are used, the coverage of each respective model. Please include a statement of material omissions from the model.
- D6. General description of the system, the theory behind its development and the assumptions used when developing it. Please also provide the rationale for adopting these assumptions and an assessment of the impact of these assumptions on the results produced by the capital model.
- D7. The definitions used for operational risk, losses, categories (business lines), events and other relevant terms.
- D8. Description and justification for the subjective elements in the measuring system and an indication of their relative importance.
- D9. The indicators used for testing the predictive capacity of the measurement system, and the circumstances in which the model will not work effectively.
- D10. An explanation of how the model achieves an appropriate balance between stability and responsiveness.
- D11. Description of the approval process for the model in terms of the parties involved and their responsibilities, the internal policies and procedure documentation, and the evaluation procedure.
- D12. If applicable, this Office requires applicant banks to provide details of risk measurement systems that have been built, developed and used in another jurisdiction and provide details of any contact the applicant bank has had with the local supervisor in relation to this.

## **7.2 An overview and explanation of how the four elements are used in the AMA model**

This should include:

- D13. A brief description of the elements used in the AMA model, including justification for the weighting of these elements in the model.
- D14. Internal data
- Observation period, explanation of how the applicant bank ensures that the available loss data are complete, what collection threshold has been applied and why it has been applied.

- Criteria for allocating loss data to the business line framework specified in Table 1 of regulation 33(9)(d) of the Regulations and seven defined events as detailed in regulation 33(9)(d)(iv) of the Regulations.
- Description of how credit risk losses are separated from operational risk losses.
- Description of how losses that cannot clearly be allocated to any one business line are allocated.
- Description of how the applicant bank ensures that historical loss data and subjective model overrides are relevant.

#### D15. External data

- Description of which, and how many, external data sources are present, why the external data are used or are necessary, and whether the data are complete.
- Description of procedures which ensure a check on the use of external data.
- Description of scaling factors (how external data are made relevant to the applicant bank).

#### D16. Scenario analysis

- Description of the procedures for performing, validating and evaluating scenario analyses.
- A list of key risk scenarios, including relevant titles, codes, and other appropriate identification references.
- The results of the last scenario analysis(es) performed.

#### D17. Changes in the business environment and internal control environment factors, including:

- Description of how factors that could change the business environment or the applicant bank's own control environment will be taken into account in the risk assessment.
- Factors identified, and why they were chosen.
- The consequences for capital requirements (minimum/maximum addition or deduction).

### **7.3 An explanation of the applicant bank's approach to achieving the required soundness standard in the model**

This should include:

D18. The rationale and justification for determining the soundness standard. Given the continuing evolution of analytical approaches for operational risk, this Office is not specifying the approach or distributional assumptions used to generate the operational risk measure for regulatory capital purposes. However, a bank must be able to demonstrate that its approach captures potentially severe 'tail' loss events. Irrespective of the approach used, a bank should demonstrate that its operational risk measure meets a soundness standard comparable to that of the internal ratings-based approach for credit risk, (that is, comparable to a one-year holding period and a 99.9<sup>th</sup> percentile confidence interval).

D19. An explanation of how senior management takes comfort that the soundness standard has been attained.

D20. An explanation of how the applicant bank ensures that the soundness standard is achieved on a continual basis.

#### **7.4 Explanation of the applicant bank's approach to correlation for the purposes of calculating its operational risk capital requirement**

The following should be included:

D21. The rationale and justification for using correlations to determine the aggregated operational risk capital requirement.

D22. An explanation of the methods used for estimating correlation and the empirical evidence which the methods are based upon.

D23. An explanation of how correlation is incorporated into the model and the level of diversification benefits recognised.

D24. The process the applicant bank undertakes for checking and validating any correlation assumptions and how it takes comfort that they are accurate.

D25. The ongoing process for ensuring that the correlation assumptions remain valid, relevant and accurate over time.

#### **7.5 Calculation and compensation of expected losses**

D26. Description of how expected losses are calculated.

D27. Explanation of how the applicant bank takes expected losses into consideration in its internal operations.

D28. Explanation of how expected losses are properly taken into consideration.

#### **7.6 An explanation of the applicant bank's approach to using insurance under AMA**

This should include:

D29. Confirmation from the applicant bank that a self-assessment against all relevant criteria for the impact of insurance has taken place.

D30. A description of the self-assessment process undertaken by the applicant bank.

D31. An explanation of how the level of insurance mitigation is derived.

D32. A description of how the applicant bank ensures that intra-group policies or cessions of policies are excluded.

D33. An explanation of how the risk mitigation calculations reflect the insurance coverage.

D34. If non-insurance risk transfer mechanisms are used, please discuss their nature and the way in which their features are captured within the AMA.

## **7.7 Allocation of capital from the group AMA model**

D35. A description of the methodology used for allocating operational risk capital between the different entities of the group, in particular to significant subsidiaries. For example, are stand-alone AMA models being used for significant subsidiaries or is capital being allocated from the group AMA model? If the latter, please provide a brief explanation and justification for the allocation methodology being used. The explanation should include an outline of any diversification benefits used, their rationale and magnitude.

## 8. Section E: Sign-off

This section should be signed by the chief executive officer of the applicant bank.

### 8.1 Declaration

By signing and submitting this application form:

- I declare that I am duly authorised to do so.
- I confirm that the information contained within this application is correct, complete, accurate and truthful, and represents a true and fair view to the best of my knowledge and belief and that I have taken all reasonable steps to ensure that this is the case.
- I confirm that I am aware that it may be an offence knowingly or recklessly to give the SARB information that is false or misleading in a material manner.
- I acknowledge that some questions do not require the bank to provide supporting evidence in response. However, the records that demonstrate compliance will be available to the SARB on request.
- I acknowledge that I will notify the SARB immediately if there is a significant change to the information given in the form. If I fail to do so, this may result in a delay in the application process.
- I confirm that I consent to any information provided in relation to this application to be shared with relevant regulators at the SARB's discretion.

Date: \_\_\_\_\_

Name of signatory: \_\_\_\_\_

Position of signatory: \_\_\_\_\_

Signature: \_\_\_\_\_