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HUNGARIAN FINANCIAL
SUPERVISORY AUTHORITY

VALIDATION GUIDELINES

ON THE IMPLEMENTATION, ASSESSMENT AND APPROVAL OF INTERNAL RATINGS BASED (IRB) APPROACHES AND ADVANCED MEASUREMENT APPROACHES (AMA)

PART II
OPERATIONAL RISK

June 2008

ABBREVIATIONS

AMA	Advanced Measurement Approach	Advanced Measurement Approach
TSA	The Standardised Approach	The Standardised Approach
ASA	Alternative Standardised Approach	Use of an alternative indicator in the Standardised Approach
BIA	Basic Indicator Approach	Basic Indicator Approach

The primary governing statutes for the development of this part of the Validation Guidelines include the provisions of the Act on Credit Institutions and Financial Enterprises (subsequently the ACI), of Government Decree No. 200/2007 (VII.30.) on the Management and Capital Requirement of Operational Risk (subsequently the DOPR), of Directive 2006/48/EC (subsequently the CRD) and primarily its Annex X and of the document titled "Guidelines on the implementation, validation and assessment of Advanced Measurement (AMA) and Internal Ratings Based (IRB) Approaches" (subsequently GL 10). The contents of this part of the Validation Guidelines are to be considered as additions to the above.

With regard to operational risk, in addition to the Advanced Measurement Approach, simpler approaches are also discussed in these Guidelines.

Following the entry into force of Hungarian government decrees regulating the operational risks of investment firms, the HFSA will amend the relevant sections to the extent that will be necessary. Until the entry into force of the government decree, the HFSA shall apply the contents of Chapters 1-3 of these Guidelines in relation to the general operational risks of investment firms under Basel 2 and their capital requirements, while the contents of Chapter 4 shall apply for special risks.

Pursuant to the general rules prescribed under Articles 68 and 71 of the CRD, capital requirements for operational risks must be met on both the individual and the consolidated levels. Individually, credit institutions and investment firms are subject to the Directive. An institution may be exempted from the requirement to individually comply with the requirement if it meets the conditions specified in the CRD. On a consolidated basis, with consideration also to exemptions, the CRD interprets compliance for the group of institutions subject to consolidated supervision, regardless of whether or not they are individually subject to the CRD. Accordingly, systems for the identification, measurement, management, analysis and reduction of operational risks must be established for the group of institutions subject to consolidated supervision.

1 VALIDATION OF THE USE OF SIMPLER APPROACHES

1.1 Basic Indicator Approach[1]

Pursuant to the DOPR, the use of the Basic Indicator Approach is not conditional on the prior notification of, or authorisation by the HFSA. Nevertheless, these Guidelines contain the supervisory interpretation of some details in order to assist institutions in their work

[1] CRD Annex X Part 1; DOPR Article 3

and to provide transparency for the considerations of potential comprehensive supervisory reviews that may be conducted once the approach has been implemented. In addition to the issues discussed here, it is important to draw attention to the relevant sections of Article 13/C of the Act on Credit Institutions and Financial Enterprises and of Annex V to the CRD related to the organisational and technical requirements for risk management, which will be discussed in more detail in Part III of these Guidelines within the part on Corporate Governance.

1.1.1 Relevant Indicator

1. The relevant indicator is the average of the annual amounts of the items listed under CRD Article 3 Paragraph (1), calculated over the last three fiscal years (which in Hungary is identical to the last three calendar years). When performing the calculation data should be taken from the three most recent audited annual reports for the three most recent subsequent completed business years prior to when the calculation is made. The annual amounts must extend to all portfolios or business lines covered by the Basic Indicator Approach. Items that improve profits should be included with a positive sign, while items that reduce profits should be included with a negative sign.

2. If actual data for the 3 prior years is not available to the institution for the calculation of the average, business estimates may be used for periods where data is not available. For institutions, business lines or lines of activities just being started, the relevant indicator should be estimated using data taken from the business plan. Estimates based on the business plan are to be prepared only for the next, single full calendar year, until actual data become available for three prior years. If the capital requirement is unusually low, the calculations used for making the business estimates are to be presented by the institution if instructed by the HFSA.

3. For institutions, business lines or lines of activities just being launched, the issuance of the operating license is conditional on the approval by the HFSA of the estimated value of the operational risk capital requirement. If the institution adequately demonstrates to the HFSA that the use of the 3-year average would unreasonably over-estimate the actual operational risk exposure, such as under extraordinary or exceptional circumstances like the selling of business lines or portfolios, the HFSA may permit the use of a different calculation method.[2] Using the same pattern, the HFSA may instruct the institution to make corrections, if justified by extraordinary circumstances that may result in under-estimation, such as if portfolios were purchased.

4. In the event of a merger, de-merger or a change in the scope of activities and if authorised by the HFSA, pursuant to DOPR Article 3 Paragraph 2, the operational risk capital requirement may be specified using estimated data contained in the business plan. We note, that if the scope of activities is reduced, the HFSA shall require specifically exceptional circumstances and a significant over-estimation of the capital requirement in order to authorise the gross revenues related to the discontinued activities to be omitted from the calculation of the 3-year average, with consideration to the potentially large amount of time required to recognise operational risk events.

5. If the calculated value of the relevant indicator for the year in question is negative or equal to zero, it should be entered as a zero in the enumerator for the calculation of the average. If this is the case, the denominator should contain only the number of years with positive values.[3] Annex 1 contains an example for the calculation of the capital requirement.

[2] GL 10 (CEBS 10 consultation paper) Section 486
[3] DOPR Article 3 Paragraph (3)

6. The relevant Hungarian government decree[4] governing credit institutions is fully harmonised with the Directive[5] specified in the CRD as the basis for the definition of accounting categories to be considered in the relevant indicator. In addition to the original scope of this government decree, this categorisation is also to be applicable for certain profit items of investment firms[6].
7. Dividends and profit sharing from companies subject to consolidated supervision should not be included in the relevant indicator computed by the highest-level (consolidating) institution obliged to comply with the criteria of consolidated supervision provided that the consolidated institution is also obliged to independently calculate its operational risk capital requirement (i.e., it is a credit institution or investment firm)[7]. It is to be noted in this regard, that the position of the HFSA is conform with the EU Directive and the original BCBS Recommendation, dividends and profit sharing from subsidiaries located in countries without effective regulations to be applied may not be excluded from the calculation of the group-level relevant indicator, regardless of the status of the subsidiary as a credit institution or investment firm.
8. For the calculation of the relevant indicator, the various items must be taken into account before any deduction for provisions or revaluation is made.[8] Exceptions to this rule include items belonging to the trading book (regardless of whether the institution has an obligation to keep a trading book or an exemption), where the creation and the release of provisions, reserves for impairment losses and their reversals and revaluations that modify the net book value, are all to be included in the calculation of the relevant indicator.
9. The relevant indicator is to be calculated without the deduction of operating expenses. With regard to operating expenses, it is worthwhile to note that charges paid for outsourcing services may be deducted from the relevant indicator. Charges for outsourced services that may be deducted from the relevant indicator include charges where the company performing the outsourced activity is subject to the CRD or an equivalent regulation, which in our interpretation means that it is obliged to create capital requirements for operational risk and it is neither a parent, nor a subsidiary of the institution.
10. Outsourced services are meant to include activities that fulfil the requirements of Article 13/A of the ACI and Article 160 of the Capital Market Act, and are also approved by the HFSA:
11. Of the categories not to be included in the relevant indicator, 'Income derived from insurance', in our understanding, refers exclusively to revenues from insurance claims where the institution is the beneficiary, that is, income from the sale of insurance products should be included in the relevant indicator. In the case of insurance providing comprehensive coverage for the institution (and not concluded to secure individual financial service transactions, such as a retail loan), the costs of the insurance paid by the institution are classified under other operating expenditures, and therefore have no effect to reduce the value of the relevant indicator.
12. Pursuant to the provisions of CRD Article 3 Paragraph (2) Section a), profits from the sale of items not to be recorded in the trading book (regardless of whether the institution has

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[4] Government Decree No. 250/2000 on the Specific Features of the Annual Reporting and Bookkeeping Obligations of Credit Institutions and Financial Enterprises

[5] Council Directive 86/635/EEC of 8 December 1986 on the Annual Accounts and Consolidated Accounts of Banks and Other Financial Institutions

[6] CRD Annex X Part 1 Section 9

[7] The reason for this section is to avoid a duplication of capital requirements for operational risk already created by group members. DOPR Article 3 Paragraph (4) Section c)

[8] DOPR Article 3 Paragraph (4) Section a)

an obligation to keep a trading book, or an exemption) are to be excluded from the calculation of the relevant indicator. We think it is important to note here, that this exemption covers not only securities, but all assets in a bank's books, including for example receivables, tangible assets, intangible assets, equity interests, etc.

13. Annex 3 presents the profit & loss Categories that form the basis for the relevant indicator and the exceptions to be used, through the example of the individual profit & loss statements of the credit institutions. We draw attention to the changes in Annex 3 that were necessitated by the entry into force of the DOPR. The changes are due to the requirement to perform the netting of profits (by deducting provisions and impairment losses) on items entered into the trading book, and due to the extension of the earlier restricted range of other revenues to be included in the calculation.

14. The HFSA expects changes in the calculation of the relevant indicator and of gross revenues to be implemented within the data provided following January 1, 2009.

1.2 The Standardised Approach[9]

15. The HFSA will apply the provisions of GL 10 Section 480: If an institution intends to use the TSA approach, it has to inform the Supervisory Authority in advance of its intentions to obtain a preliminary authorisation. This coincides with the Hungarian regulations (DOPR Article 5). Annex 5 contains the guidelines for the process of authorisation for the use of the TSA method.

1.2.1 Capital Requirements

16. The provisions of the "Relevant indicator" section of the Basic Approach chapter of these Guidelines are applicable to relevant indicators calculated by business line, with the exception of Sections 1 (relevant indicators by business line to be used) and 5 (treatment of a negative relevant indicator for a business line), which are regulated differently under the Standardised Approach.[10]

17. The total capital requirement for portfolios or activities covered by the Standardised Approach is the sum of the capital requirements calculated for the individual business lines defined under DOPR Article 5 Paragraphs (6)-(13). The capital requirement for an individual business line is the percentage of the relevant indicators related to the concerned business line as specified in the aforesaid table.[11]

18. As a result of the departure from the average calculation method described under the Basic Indicator Approach, the denominator used in the average calculation under the Standardised Approach is always 3, irrespective of the value of the business line's relevant indicator for the year concerned.

19. Unlike the Basic Indicator Approach, the Standardised Approach allows negative business line profits calculated for the given year to be considered for the calculation of the relevant indicator of the business line by reducing the nominator of the business line's relevant indicator. If, however, the sum of the eligible net income of the business lines covered by the Standardised Approach is negative in the given year, the numerator of the business

[9] CRD Annex X Part 2; DOPR Articles 4-5
[10] CRD Annex X Part 2; DOPR Articles 4-5
[11] DOPR Article 4 Section (5)

line's relevant indictor must always contain a zero for each business line covered for the year. An example for the calculation of the capital requirement is set out in Annex 1.

20. It should be noted that for the simple approaches, the requirement of consistency between internal capital allocation (ICAAP) and the allocation of the minimum capital requirement in Pillar 2 is implemented differently than with other approaches (IRB, AMA). In respect of the simple operational risk approaches, the minimum capital requirement is to be interpreted globally, for the entire institution, therefore the internal allocation of capital does not have to be consistent with the allocation of the minimum capital requirement, as the risk of the business lines which are loss-making in the year based on the relevant indicator would not be captured adequately.
21. The institution must draw up regulations to provide for the process of the calculation of capital requirements, the entities participating, the persons supplying data, their tasks and competences. These regulations must at all times be in compliance with the internal policies required in connection with the classification into business lines.
22. Until 31 December 2012, an institution whose relevant indicator for the trading and sales business represents at least 50% of the sum of its relevant indicators for all of its business lines may apply a multiplier of 15% instead of the standard 18%. The institution must demonstrate in advance to the HFSA that it meets the 50% threshold. [12]
23. Hungarian legislation[13] has opted[14] to allow institutions applying the Standardised Approach to use an alternative indicator if the conditions for its application are met.

1.2.2 Business Line Mapping[15]

24. With regard to the requirements concerning the documented regulation of business line mapping, we consider it particularly important that the responsibility for keeping regulations continuously consistent with the expectations should rest with top management (different institutions may follow different practices in this respect), and that the effectiveness of the documentation should be subject to approval by the Board of Directors.
25. Institutions must develop detailed written regulations on how they map activities to business lines and on their specific mapping criteria[16]. The regulations must also cover the fixed and objective criteria for how support functions are to be mapped unambiguously to business lines[17].
26. The regulations for the mapping to business lines must cover activities mapped using exceptional procedures that are fundamentally different from the principles generally applied, as well as the procedure used for these. The institution must maintain up-to-date records of the exceptions used, of any decisions that supplement or overrule the general principles and of their justification, and these records must, in addition to the effective exceptions, contain all exceptions applied in the past, together with their time of application.
27. In our interpretation, compliance with the requirements set out in the previous two sections is assured if a third party or the HFSA, in possession of the relevant up-to-date

[12] Based on CRD Article 155; DOPR Article 16
[13] ACI Article 76 Section (6); DOPR Article 6 Paragraph (1)
[14] CRD Annex X Part 2 Subchapter 3
[15] CRD Annex X Part 2; DOPR Article 4 Paragraphs (6)-(13)
[16] To supplement CRD Annex X Part 2 Table 2 and DOPR Article 4, Annex 2 contains examples for the mapping of specific activities that should not exclude other interpretation options being acceptable if proper reasons are provided.
[17] DOPR Article 5 Paragraph (2)

documentation, could at any time (including for dates past) reproduce the actual mapping to business lines and in specific the value of the relevant indicator for a business line.

28. The documentation for the mapping of activities to business lines must provide clear guidance on how regulations for new or modified activities should be incorporated, the procedure to be followed when modifying the mapping, the decision making competencies and the methods for the supervision of the actual practice. The regulations must always be reviewed accordingly, as an immediate response to changes in activities or risks.

29. In our opinion, the requirement for each activity to be mapped unambiguously to a business line, is met if the annual sum profit or loss for the entire institution, obtained as a sum total of the appropriate items of the income statement as reported to the supervisory authority (in line with the annual profit and loss items included in the relevant indicator), is identical to the sum of the relevant items of the income statements calculated by the institution for the business lines mapped by the institution. Information provided to the HFSA must be compiled in accordance with Hungarian accounting regulations, i.e., this will be the basis of assessment when examining the completeness of the mapping of activities to business lines and the calculation of capital requirements for operating risk. The documentation pack to be submitted by the institution for the authorisation of the Standardised Approach should contain a calculation that demonstrates this. A review of the completeness of the mapping constitutes part of the procedure for the authorisation of the Standardised Approach.

30. The institution may use internal pricing methods to allocate the relevant indicator between business lines. The practice for the use of internal transfer prices must constitute part of the documentation for the mapping of activities to business lines. In our interpretation, the regulation of internal transfer pricing practices is adequate, if the requirements set out in both Paragraph 27 and Paragraph 29 are satisfied.

31. If some specific activity cannot be mapped to any of the business lines described under DOPR Article 4 Paragraph (5), then the institution must use the highest of the percentage values valid for the individual business lines in calculating the capital requirement.

32. Methodological changes with effect on the mapping of activities to business lines and on the value of the capital requirement may only affect gross incomes calculated as of the year of their implementation (including the entire calendar year of their implementation, irrespective of the date of implementation during the year), but not the values for prior years also considered in the relevant indicator. Modifications with retroactive effect may be possible in exceptional and justified cases, subject to approval by the HFSA.

33. The internal audit function of the institution may also be accepted to perform the independent review at appropriate time intervals.[18]

1.2.3 Qualifying Criteria[19]

34. In our interpretation, the function of the risk assessment system is not limited to the definition of capital requirements.

35. In order to meet the qualifying criteria, it is necessary to collect data on the relevant operational risk, meaning the collection of data on material losses as well as data related to operational risk and of significance for management.[20]

[18] CRD Annex X Section 12; DOPR Article 5 Paragraph (1) a)
[19] CRD Annex X Section 12; DOPR Article 5

36. The HFSA sets no threshold value or definition regarding the materiality of the loss; the institution must develop a uniform definition for the concept of material loss, which should be part of the documentation of the required self-assessment system[21] and which should be communicated and internalised at all levels within the organisation. Without excluding the use of other methods, when data collection is started, the value of material loss can be defined, for instance, based on some size indicator, but in this event, in order to ensure the consistency of the database, the threshold resulting from the current value of the indicator should be applicable in the long term.

37. As a minimum, the following information should be collected on material losses (the principles of the Advanced Measurement Approach (AMA) concerning data collection may provide additional guidance for the collection of loss data (see Section 2.3.2.))

38. The collection of data may go beyond the collection of material loss events; "near miss" events eventually not resulting in losses as well as operational risk events resulting in profits under the specific circumstances also represent important information for the actual management of operational risk. The conscious monitoring of these events as well as other operational risk aspects resulting in reputation and other residual risk exposures/losses allow for the fine-tuning of risk management, economic capital calculation and internal capital allocation.

39. The collection of data related to additional loss events is particularly justified for institutions that aim to use the Advanced Measurement Approach in the future.

40. Data must be collected using a method that ensures data integrity and the possibility of assessment by operational risk management at any time.

41. Information derived from loss data must be reflected in internal reports[22]. Reports must also contain a description of the measures taken or proposed in order to mitigate losses or to avoid them in the future. Ad-hoc reports are to be prepared for particularly large losses.

42. In addition to top management, relevant areas include the levels of management with the responsibility and competence to decide and order that appropriate measures be taken. The documented regulations must provide for the contents of internal reports, the process for decision-making and the implementation of decisions, the procedures to be followed and the scopes of responsibility.

43. The regular independent reviews prescribed for the risk measurement and risk management systems may also be performed by the internal audit function of the institution. The institution must provide for the frequency of the reviews in its relevant internal regulations.

1.3 Use of an Alternative Indicator within the Standardised Approach[23]

44. The HFSA will apply the provisions of GL 10 Section 481: An institution wishing to use an alternative indicator must inform the HFSA in advance to obtain an authorisation. The

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[20] Example: Registration of undesired events falling within the scope of operational risk that have not resulted in losses that can be quantified or that have not been quantified by the institution (such as a system outage). An estimate by an expert may be used if a loss can not be quantified.
[21] CRD Annex X Section 12 a); ACI Article 13/C; DOPR Article 5 Paragraph (1) a)
[22] CRD Annex X Section 12; DOPR Article 5 Paragraph (1) e)
[23] CRD Annex X Part 2 Subchapter 3; ACI Article 76 Section (6); DOPR Article 6 Paragraph (1)

documentation related to the authorisation process for the use of an alternative indicator forms part of the Authorisation Guidelines published on the homepage of the HFSA in August 2007 on the authorisation of the Standardised Approach, an updated version of which is included in Annex V to these Validation Guidelines.

45. Meeting the conditions of the Standardised Approach as outlined above is a prerequisite for the use of an alternative indicator.[24]

46. Institutions may use this approach for two business lines: retail banking and commercial banking.

47. An institution may use this approach if the gross income from these business lines (the income to be taken into consideration for the computation of the relevant indicator) exceeds 90% of the overall gross income of the institution[25]. If one of the two business lines in itself meets that requirement, the institution may use the approach for that business line exclusively. The 90% limit must be met for the average of the three years considered for the calculation of the relevant indicators.

48. The institution must demonstrate that a significant proportion of the assets of the relevant business lines have a high probability of default, and that the use of the Alternative Standardised Approach provides a better estimate of the operational risk exposure.[26]

49. In the interpretation of the HFSA, by enabling the use of an alternative indictor the aim of the CRD is to prevent the "standard" capital requirement for operational risks from placing a double burden on the retail banking and commercial banking business lines, where a significant part of the high gross income arises from a risk premium offsetting a high credit risk taken and which therefore is already burdened with a higher capital requirement for credit risk.

50. With regard to high credit risks, domestic regulations specify the threshold at 3% probability of default[27]. In line with the changes in the domestic macroeconomic and lending environment the HFSA initiates a change of statutes for the amendment of the threshold if it assesses the actual threshold value to be out of line with the spirit of the CRD as outlined in the previous section.

51. A "significant part" is to be interpreted as a partial portfolio with a value exceeding 50% of the total portfolio value, interpreted separately for each of the two business lines. As proof of the high probability of default (or the high credit risk, see below) of a significant part of the portfolios of the two business lines, the HFSA instructs the institution applying for the authorisation or the institutions already using an alternative indicator, to submit profit and loss on the basis of both value and units for the weighing (see below).

52. An institution may use the alternative indicator if it concurrently meets the above special conditions as well as the conditions presented for the Standardised Approach. The supporting documentation that demonstrates compliance with the relevant regulations must be sent to the HFSA in order to obtain approval for the use of the alternative indicator, every year while the alternative indicator is used, and when using the alternative indicator to specify the capital requirement for the affected business line(s) for a subsequent year. An inspection of whether the conditions for the use of the alternative indicator are met is part of any investigation by the HFSA.

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[24] GL 10 Section 481

[25] CRD Annex X Part 2 Section 10; DOPR Article 6 Paragraph (3) a)

[26] CRD Annex X Part 2 Section 11; DOPR Article 6 Paragraph (3) b)

[27] DOPR Article 6 Paragraph (3) b)

53. The HFSA applies the option described in GL 10 Section 483. Pursuant to this, if an institution fails to meet the 90% condition while using the alternative indicator, it may still continue to use the alternative indicator if it undertakes to meet, and provides appropriate supporting information that it will meet the condition again in the subsequent year. Should the institution fail to meet the 90% condition also in the subsequent year, it then loses the right to use the alternative indicator.[28]

54. he following additional provisions of the DOPR shall be normative for the authorisation and investigation practices of the HFSA:

- In addition to demonstrating the extent of their credit risk, institutions must also demonstrate their regulated and consistent application of risk based pricing[29];
- In order to justify a credit risk level equivalent to a 3% probability of default, the institution may, if authorised by the HFSA, use an estimate for the loss rate, as well as actual loss data.[30]

2 Validation of the Use of the Advanced Measurement Approach (AMA)[31]

2.1 Introduction

55. Supervised institutions may use the Advanced Measurement Approach (AMA) to measure regulatory capital requirements for operational risk. This requires an authorisation issued by the HFSA.

56. The process of validating the AMA, with consideration to its special characteristics, is similar to the validation of the IRB already presented under credit risks. The HFSA, also in the case of AMA, consults and cooperates with its affected peer supervisory authorities, regardless of whether it participates in the validation process as the home or as the host supervisory authority.

57. When submitting the application for authorisation the institution must have a methodology, developed in all detail, for the calculation of the capital requirement. The detailed documentation of the proposed methodology to be used, enabling its complete replication, must be attached to the application for the authorisation. The detailed documentation of the validation of the model, enabling its replication in full, must also be attached.

58. Institutions will be able to apply the AMA as of 1 January 2008. Until an authorisation for the application of the AMA is issued, institutions must determine their capital requirement amounts for operational risks by using either of the BIA or the TSA methods. The application of the Standardised Approach (TSA) for the determination of the capital requirement for operational risk is possible only if the HFSA has authorised its use for the institution. Without an authorisation the institution must use the Basic Indicator Approach (BIA).

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[28] We draw attention to the fact that a similar option is not available for the other quantitative condition (the condition defined above on the basis of CRD Annex X Part 2 Section 11; DOPR Article 6 Paragraph (3) b)).
[29] DOPR Article 6 Paragraph (3) b)
[30] DOPR Article 6 Paragraph (4)
[31] CRD Annex X Part 3; DOPR Subtitle „Advanced Measurement Approach" (Articles 7 – 10)

2.1.1 Application for Authorisation

59. A written application for the authorisation of AMA is required in the following cases:

- For the introduction of AMA in the given institution;
- For the addition of new exposure categories and/or business units.

2.1.2 The Process of Authorisation

60. The process for the authorisation of the AMA starts with the submission of an application by the institution to the HFSA. Each institution must submit an application individually, even if several institutions have developed their models together. Within their applications, institutions must identify the institutions with which they form a consortium for data or for the model. In the course of the procedures related to the individual institutions, the HFSA may use the information obtained about the consortium in procedures conducted with other institutions.

61. At first, the HFSA checks the completeness of the applications received.

62. The contents of an application may be examined within the framework of an on-site review.

63. In the course of the authorisation process the HFSA reviews the following:

- The structure of the systems and the organisation of the processes related to the identification of operational risks, their measurement and control, reporting and governance;
- The adequacy of the applied (AMA) methodology for establishing the values related to operational risk and for the verification of the quality of the data used;
- The internal methods for controlling the risk measurement system;
- The reliability and integrity of the relevant IT systems.

64. Authorisations are issued on the basis of the approval process conducted at the institution. The HFSA sends a draft examination report to the institution, which may in turn consult the HFSA about the contents of the report. Any issues that remain outstanding are decided by the HFSA.

65. Authorisations are granted with resolutions issued by the HFSA. Institutions may only start to use the AMA for the calculation of capital requirements for operational risk once the relevant resolution is issued. An authorisation by the HFSA may be subject to the fulfilment of certain conditions as set out in the resolution.

66. Once the HFSA has issued an authorisation, the institution must continuously comply with the requirements specified in statutory regulations and must always comply with the specified time schedule. During subsequent reviews, the HFSA will review these, as well as whether the conditions set out in the resolution are being met. The institution must notify the HFSA without delay if it is unable to comply with the time schedule due to some extraordinary cause.

2.1.3 Authorisation Criteria

67. If the applying institution submits the application together with its attachments and the related time schedule for implementation, the HFSA will conduct an on-site approval review at the premises of the institution. The HFSA will conduct the approval review only if the institution has met the following criteria:

It has all the historical internal loss data to be used within the AMA for a period of at least three years preceding the launch date of the planned implementation of the AMA. In respect of the period for which the necessary time series of historical data are available, the institution must be able to retrospectively perform all calculations that it plans to perform within the AMA;

It has satisfied itself that the methodology is appropriate for the measurement of risk and for the calculation of regulatory capital.

68. As a minimum, the review of the applied AMA method includes the following:
    - Review of methods for the identification, measurement, control, reporting and management of operational risk;
    - The implementation and the use of the methods (for the identification, measurement, control, reporting and management of operational risk),
    - The validity, significance and quality of the data used;
    - Testing of the model using qualitative and quantitative methods;
    - The relevance of the technical environment.
69. The institution must document its remedial action plan to eliminate deficiencies, if any, complete with a time schedule.
70. During the examination of the institution the HFSA may use the relevant findings of the institution’s internal audit, of any external audits performed, as well as of any examinations conducted by the HFSA at other institutions.

2.1.4 The Application

71. The application must be submitted to the HFSA both on paper and electronically.
72. If the application is submitted by a group of institutions on a group-wide basis, they must specify the group members that participate in the group-wide capital calculation, as well as those that calculate capital requirements on an individual basis. Each group-member institution that intends to calculate capital requirements on an individual basis must submit a separate application. Institutions intending to calculate capital requirements on an individual basis must submit their applications concurrently with the application submitted by the group. If the institution is a subsidiary, the parent institution must be identified. If an institution is incorporated in another country, its home county and home supervisory authority must be identified. A consultation with the HFSA is recommended if it is not clear which group member(s) must submit applications.
73. Within the application, the person responsible for the issue and, if different, the supervisory contact person of the institution (on issues of operational risk) must be identified by name.
74. The documents attached to the application must enable the HFSA to develop a fundamental judgment and a well-founded position on the Advanced Measurement Approach that the institution intends to use.
75. The HFSA may instruct the institution to submit additional information if it deems the documentation already submitted to be inadequate or insufficient in order for it to develop its position. If the documentation made available to the HFSA by the institution does not provide sufficient and adequate information, the HFSA may reject the application.

76. Together with the signed application, all documents listed within the list of requirements for the AMA must also be submitted. Institutions must provide details on how they comply with the individual criteria.

77. As part of the application, the institution must also develop a roll-out plan for the implementation of the AMA. The HFSA expects the institution to complete the implementation of the AMA at its significant units according to the roll-out plan, within 5 years from the HFSA issuing its resolution. In addition to the implementation dates, the roll-out plan must also present the new processes and the changes to existing processes that will enable measurements related to operational risk to be made and improved.

2.1.5 Validation of the Roll-Out Plan[32]

78. The roll-out plan for operational risk is fundamentally different from the roll-out plan described under credit risk. The DOPR allows institutions to perform a staged roll-out of the Advanced Measurement Approach, one business unit after another.

Institutions that must prepare a roll-out plan include institutions that use the AMA on its own or in combination with either the BIA or TSA.[33]

79. DOPR Article 11 allows the HFSA to impose, on a case-by-case basis, the following additional conditions on institutions in the course of validation:

- As of the date of implementation of an Advanced Measurement Approach, a significant part of the credit institution's operational risks (the operational risks of all activities and organisational units that represent at least fifty percent of the so called gross revenues of the institution as defined under DOPR Article 3 Paragraph (1)) should be captured by the Advanced Measurement Approach;
- The credit institution must commit to roll out the Advanced Measurement Approach across a material part of its operations within a time schedule agreed with the competent authorities.

The institution must prepare a roll-out plan that:

- Can be executed to a reasonable schedule;
- Is based on the best efforts of the institution.

80. A staged roll-out is based on the order of importance of the exposure grades and of the business lines, i.e., implementation should occur first for the business lines that are most important within the activities of the institution. As a minimum. the roll-out plan should contain the following:

- The principles and considerations used for the roll-out;
- The proposed time schedule for the implementation of the AMA, which the institution must present separately for each individual exposure category and/or business unit for which it intends to use the model. The HFSA expects the duration of the roll-out of the model not to exceed 5 years from the grant date of the authorisation. In addition to the final deadline, the time schedule should also include the individual tasks with their implementation schedules and deadlines. The level of detail is a key consideration in the assessment of the roll-out plan.
- A presentation of the actual level of preparedness at the time of the submission, separately for each individual exposure category and/or business unit for which the institu-

[32] CRD Annex X Part 4; DOPR Subtitle „Concurrent Use of Several Approaches" (Articles 11 – 12)
[33] CRD Annex X Part 4 Section 1; DOPR Article 11

tion would like to use the model. The institution must present the measures taken to comply with the requirements of statutory regulations, the results of such measures and the self-assessment performed by the institution.

- The justification for the use of the model, separately for each individual exposure category and/or business unit for which the institution would like to use the model. If the institution defines business units to mean entities other than subsidiaries, a justification of the deviation and a description of the resulting consequences should also be included.

81. The rules concerning the execution of an approved roll-out plan, it's monitoring by the HFSA, as well as the rules applicable to acquisitions, mergers and withdrawals are identical to those described for the IRB Approach under credit risks.

2.2 Qualitative Standards - „Use Test"[34]

82. Application of the AMA is conditional on meeting criteria set out in general governance and risk management standards.[35]
83. A system for the measurement of operational risk must contain the following four key elements: internal data, external data, scenario analysis and factors reflecting changes in the internal and external environment.
84. In addition to these general conditions for risk management, institutions must also comply with the qualitative requirements listed in statutory regulations[36]. In connection with these conditions, the following expectations can be set for institutions using the AMA:

- The management of operational risk must be integrated into day-to-day risk management processes and must be incorporated into the overall risk management practice;
- Risk management should be independent within the organisation: its independence from other organisation units must be ensured;
- There should be regular reporting on operational risk exposures and loss events to the Board of Directors and Executive Management, and the reports should be discussed by these bodies. The frequency of reporting should be determined by the internal risk profile, but reports must be generated at least once a year.[37]
- The institution must ensure that the system for operational risk measurement is appropriately documented (measurement documentation, results);
- The management and measurement of operational risk must be verified at least annually by an internal or external auditor;
- Operational risk management should not be limited to fulfilling the regulatory requirements. The institution must demonstrate that the estimations, predictions or outputs from the measurement system are used in the decision making process.[38]

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[34] CRD Annex X Part 3; DOPR Subtitle „Advanced Measurement Approach" (Articles 7 – 10)
[35] CRD Article 22 and ACI Article 13/C Section (1) and CRD Annex V; ACI Article 13/C
[36] CRD Annex X Part 3 Section 1.1; DOPR Article 7
[37] In connection with this, the framework measurement system for the management of operational risk must support the management of operational risk. Internal communication and appropriate feedback must be ensured within the organisation in order for the findings of operational risk and the related responses to be represented in the internal operational system. Decisions made on the basis of the feedbacks may improve the development of processes and controls (GL 10 Section 496).
[38] GL 10 Section 496

- The risk measurement system should evolve as the institution gains experience with risk management techniques. The risk management system must be relevant and it must fully reflect the nature of the institution's business activities. The risk measurement system must be made progressively more responsive and robust.[39]

- The operational risk management system should provide benefits to the operation of the organisation. The capital calculation related to operational risk may be considered for internal performance measurement and capital allocation.[40]

85. When validating the operational risk measurement system, the HFSA audits the following conditions:

    - Whether internal risk measurement operates in line with requirements;
    - Whether the data and processes in the risk measurement system are transparent and also retroactively accessible;
    - Whether the internal validation process is appropriate.

2.3 Quantitative Requirements

2.3.1 Measurement Process

86. In line with the provisions of statutory regulations, the capital requirement for operational risk must be defined as the sum of expected and unexpected losses, although it is sufficient to create capital reserves for only unexpected losses if the institution can demonstrate that it covers expected losses within its business practices. In the interpretation of the HFSA the effective Hungarian accounting regulations[41] on the creation of provisions do not allow the creation of provisions for the expected losses of operational risk events that will occur in the future. Pursuant to the regulations on provisions and considering their specific features, the creation of provisions by economic entities regulated by the Government Decree may be subject to other, non general regulations[42]. According to the position of the HFSA it could accept institutions applying the Advanced Measurement Approach to create provisions dedicated to operational risk losses within the category of other provisions for losses to be expected within the coming 12 months related to future operational risk events, if this would be allowed under the effective statutory regulations. To this purpose the HFSA initiates a change of statutory regulations. The consideration of expected losses within pricing can also be recognised as cover, this however should be supported using appropriate documentation.

87. Operational risk modelling may rely on actual realised loss data as well as on constructed data (scenario analysis, business line parameters).

88. The institution must have a methodology describing the probability distribution of loss amounts to estimate operational risks.

89. To facilitate the assessment of risk measurement, the institution must document which percentile its total operational loss for the given period (calendar year) corresponds to the model used for determining the risk value.

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[39] GL 10 Section 496
[40] GL 10 Section 496
[41] Act C of 2000 Article 41 (Act on Accounting)
[42] Act C of 2000 Article 41 Sections 6)-7) (Act on Accounting)

90. An important audit factor in the course of validation is how the institution accounts for the four key factors (internal data, external data, scenario analysis, business and environmental factors) mentioned in the CRD and in DOPR Article 7 Paragraph (8), and how the results obtained reflect the actual risk profile.

91. The extent of operational risk must be established for all grades of operational risk[43]. Each individual operational risk estimate must rely on operational risk grades and loss data. Pursuant to CRD Annex X Part 3 Section 11 and DOPR Article 7 Paragraph (10), institutions may use correlation assumptions if they demonstrate that their correlation estimates are sufficiently stable, integrated and also considers the occurrence of stress situations. In the interpretation of the HFSA, the term 'correlation' (here and now) refers to the linkages between the data (actual or constructed) related to the various different grades of operational risk. The concept of correlation is to be interpreted in a broad sense, meaning any relationship triggered by any internal or external factor between two (or more) grades of operational risk (i.e., both linear and non-linear, related to all data or only to the "central area" or the extremities of the distribution curve). For the validation of a correlation estimate, the description of the correlation estimate and the verification of the result of the correlation model must be ensured. The documentation of the model must identify and demonstrate any correlation assumptions and must asses the sensitivity of the model to those assumptions.

2.3.2 Internal Data

92. In relation to internal data collection, the major elements of the validation work of the HFSA include the review of the completeness of data collection, the review of the substance of data collection and the review of the verification points.

Collection of Internal Data

93. The process of internal data collection consists of three fundamental stages:

Setting up the process infrastructure, meaning the definition and the maintenance of the process and the identification of units that participate in and are responsible for the collection of data.

The implementation of the data collection process, consisting of the identification, collection and validation of events and the preparation of reports. The institution, depending on its size and activities, may decide itself on the loss threshold[44] to be used for the various individual types of loss, i.e., the value above which it will record loss data in its database. The operational loss database must also record operational risk losses that are related to credit risk but are treated as credit risk by the institution with the calculation of related capital requirements. The institution must ensure comprehensive coverage in its accounting for risks, which the HFSA will also audit in the course of its Pillar II procedure. Operational risk losses related to market risks must be considered within the capital requirement for operational risks.

Supervision and control of the data collection process, to ensure the long-term reliability, completeness and adequacy of data collection. Adequacy can be ensured, inter alia, by

[43] „Grade of Operational Risk": A homogeneous (risk profile, loss data) category with regard to operational risk, the definition of which could for example be based on the 8 business lines defined in CRD Annex X Part 2 or in DOPR Article 4 Paragraph (5), or on the 7 event types defined in CRD Annex X Part 5 or in DOPR Article 13 Paragraph (1), or a combination of business lines and event types, or sets defined by activities and/or legal units.

[44] CRD Annex X Part 3 Section 15; DOPR Article 8 Paragraph (3)

trend analyses, the identification of missing data, examination of consistency with accounting data or reviews by senior management.

94. Senior management must continuously participate in the control and supervision of the data collection process. The review of data by senior management and the related measures taken, establish the foundations for the institutional culture of data collection

95. In respect of internal data, a minimum loss threshold must be specified, above which the institution will collect all loss data from every relevant sub-system and geographical location for all significant events and exposures. Exclusion from the database is only possible for data that can be demonstrated to have no significant effect, either individually or in aggregate, on total risk. Pursuant to DOPR Article 8 Paragraph (3) an activity or exposure qualifies as significant if the capital requirement for the operational risk calculated with its inclusion would exceed, by more than five percent, the capital requirement calculated by the institution without its inclusion. The inclusion of the individual activities or exposures and the estimation of the extent of the related operational risks falls within the competence of the institution, but it must always be able to justify its decision to the HFSA. The HFSA deems it acceptable for institutions to estimate the operational risks of their individual activities and organisation units in proportion to their so called gross revenues as specified in DOPR Article 3 Paragraph (1). Decisions on what should be included should be revised, if justified. The "5% limit" for the totality of the activities and the exposures not included should not only apply at the time when the model is authorised, but subsequently as well.

Content and Use of Internal Data

96. The internal data collected by credit institutions may serve several purposes, including the following highlighted examples:

- Collection of information on the various types of events[45] and, on that basis, the allocation of internal loss data to business lines and event types[46]. Internal loss data must be allocated to the business lines and event types specified in the recommendation developed by the Basel Committee on Banking Supervision.[47]
- The internal measurement of operational risks[48];
- The definition of equity requirements[49].;
- Internal reports[50].

Data on related (sequential) events should be represented in the database in the aggregate, but the database should also allow their individual identification. Institutions must specify the threshold value for the collection of loss data.

If certain loss events, each below the threshold value, can be established to be related, the aggregate loss value of the entire series of events is to be considered. In its relevant regulations the institution must provide for the manner of treatment of events that arise from

[45] CRD Annex X Part 3 Section 16; DOPR Article 8 Paragraph (5)
[46] CRD Annex X Part 3 Section 14; DOPR Article 8 Paragraph (2)
[47] International Convergence of Capital Measurement and Capital Standards: a Revised Framework: Business Lines (Annex 6) and Event Types (Annex 7)
[48] CRD Annex X Part 3 Section 13; DOPR Article 8 Paragraph (1)
[49] CRD Article 105 Paragraph (1); ACI Article 76/J Paragraph (1)
[50] CRD Annex X Part 3 Section 4; DOPR Article 7 Paragraph (3)

the same cause or that are related, as well as for the procedures used to identify such relationships.

In its relevant regulations, the institution must provide for the manner of treatment for loss events below the threshold. For the internal assessment of operational risk, we consider it acceptable if the institution estimates loss values below the threshold value based on their conditional distribution. [51]

Internal operational risk measures must be based on a minimum historical observation period of 5 years. Nevertheless, when a credit institution applies the Advanced Measurement Approach for the first time, it is also sufficient to use data from a three-year historical observation period.

In addition to those included in DOPR Article 8 Paragraph (5), the HFSA expects institutions to maintain records of at least the following information in relation to internal loss data:

- The name of the event;
- The effect of the event in addition to the gross loss that was quantified, including the related risks;
- The person recording the event;
- The description of the event;
- The dates when the event was identified and recorded and the date when the loss was booked;
- The number of loss events related to the event;
- The final or preliminary nature of the loss amount.

IT Support

97. Institutions must operate IT systems that should at all times meet the following requirements:

The IT system must ensure access to and maintenance of the appropriate database. Institutions must ensure that regular safety backups of the data storage software elements are made at regular time intervals that should be identical to the backup regime employed for other data used by the institution, to ensure that data can be recovered within the critical service continuation time provided by the system. This should be included in procedures prepared by the institution. The institution must operate a data storage system that is capable of repeatedly retrieving the records, to ensure that archived materials are stored in a way that allows their retrieval or recovery at any time for a period of at least 5 years, but at least until the duration of the data collection period.

The system must provide sufficient capacity for building the model and for calculations. The software, or the various software products in aggregate, must be suitable for generating and operating the internal models that describe the operational risk.

[51] According to our information, the planned threshold values to be used by a majority of the affected institutions range between HUF 50,000-250,000. We note that setting a lower threshold value for loss data collected in order to improve risk management enables the capture of a broader range of risks. There are significant differences in the characteristics of individual business lines that may justify the use of different business line threshold values.

The system must ensure appropriate control for the process of data collection. The institution must provide for a regulated and auditable user administration of the IT system concerning access levels, individual authorisations and their approvals, as well as scopes of responsibility, access logging and logging of extraordinary events.[52]

Quality Standards

98. Institutions should develop a continuously operating data verification system that allows for the operation of a quality risk management system that facilitates the exact calculation of the capital requirement for operational risk. Institutions may themselves develop their data quality standards, to be reviewed at sufficient time intervals but at least once every year. Institutions must be able to demonstrate that their data are appropriate, comprehensive and cover all areas of their operations. In order to ensure quality data, institutions may apply the following methods:

- Development of decision trees;
- Examination of data entry times;
- Examination of outliers or improbable values;
- Reconciliation with general ledger data (this is an expectation by the HFSA for loss data collected using both the Advanced Measurement Approach and the Standardised Approach).

99. Institutions must specify in procedures the minimum amount of data they consider necessary for the secure operation of their operational risk management systems.

100. An operational risk loss event fundamentally means a realised loss event, but for risk management purposes losses may be established before the conclusion of the event using an appropriate internal methodology to estimate the loss.

101. In order to ensure the adequate quality of data generated in the course of the internal data collection process for operational risk, the internal audit function of the institution must examine the control process for internal data collection and must reconcile loss data to book-keeping data as often as appropriate, but at least once every year.

102. In the course of internal audit, the sources of all data must be verified, with particular attention to instances where data was transferred from one system to another. Data that were left out of the database or underwent some manipulation must be recorded.

Portfolio Assignment and Acquired Business Lines

103. A special situation arises where an institution purchases portfolios to add to its existing business lines or purchases a new business line. A problem may arise where, prior to acquisition, an Advanced Measurement Approach validated by the HFSA and based on internal data had been used for the purchased portfolio or business line. In this case, the acquiring institution, in addition to notifying the HFSA about the event and the mode of the acquisition, must also determine the length of the transitory period during which consistency of the two databases can be ensured (convergence of thresholds where different, etc.). The validation procedure can only be performed afterwards.

[52] ACI Article 13/B Paragraph (1) c)

2.3.3 Validation of the Use of External Data

104. Statutory regulations require that institutions use external data for the use of the Advanced Measurement Approach. The use of external data is especially important where the institution is exposed to events of low probability but significant effects.[53]

105. The purpose of the use of external data is to supplement internal data and to define risk levels that are more appropriate for the risk profile.

106. External data may originate from public databases or the institution may be a member of a data consortium.

107. To allow for the validation of the Advanced Measurement Approach, the institution must specify the cases where it uses external data, i.e., the business lines/loss types for which it uses external loss data, and the type of data to be included in the analyses.

108. The institution must set up a methodological framework as to how it will incorporate data on operational risk events from external sources into its own database. The essence of the methodological framework is to specify clear decision making criteria to ensure that it can be applied. The use of scaling mechanisms is required to allow for external data to be applied to the institution. The scaling may be based on information related to the size or the activities of the institution, or to the complexity of its operations.

109. The purpose of scaling is to ensure that the institution adjusts the operational risk data originating from other institutions to its own risk profile, and to that end, to norm the operational risk data according to its own institutional profile. Within the documentation of the methodology, the institution must specify the assumptions used for the approach, their applicability and the instances where the scaling methodology may yield distorted results.

110. Accordingly, the institution must have documentation regarding the use of external data and must make it available for independent review. Independent review may be performed by an internal organisation unit or external auditor that has no conflict of interest with the objective operation of the operational risk management framework. A review must be ensured whenever there is a significant change affecting the risk profile, but at least once every year.

111. In the course of supervisory validation, the internal validation of the appropriate use of external data and the application of the methodology are examined. When using external data, the institution must use data that is appropriate for its own relevant risk profile.

112. Ensuring the quality of external data is especially important when consortium data are used. In this case the HFSA considers the internal quality assurance regulations of the data consortium for the validation of the use of external data by each institution. Regarding the use of external databases, the HFSA may examine, by institution, the consistency of internal data and the data of the data consortium.

113. External data may be used for several purposes, including the following highlighted examples:

- Incorporation into risk measurement, such as to supplement internal data to ensure appropriate risk measurement;
- Use for scenario analysis, such as to capitalize on the experience of external institutions to outline worst-case scenarios;

[53] CRD Annex X Part 3 Subchapter 1.2.3; DOPR Article 8 Paragraph (8)

- Internal validation based on external data, such as to analyze the consistency and comparability of loss data;
- Use for benchmarking and risk management considerations, etc.

2.3.4 Business Environment and Internal Control Factors

114. In the course of the measurement and management of operational risk, institutions must consider the relevant business and internal control factors (the risk drivers) that fundamentally determine their operational risk profile.[54]

115. When considering various factors, historic experience and expert estimates may be used. All these provide qualitative inputs to the operational risk system. The institution must create consistency between the use of operational risk elements (internal data, external data, scenario analysis).

116. The use of business environment and control factors is reflected in the industry practice for the use of self-assessment and key risk indicator systems. Examples for business environment factors could include the composition or the turnover of employees or the number of transactions, while examples for control factors could include the ratio of controls existing within the organisation to manual transactions. This however is not an exclusive requirement as other methodological tools that meet the requirements set out in the CRD and in these Guidelines may also be used.

117. The expansion or increasing complexity of business line activities and the improvement of control factors must be adequately considered. It is therefore important for institutions to repeat their assessment of the risk associated with the business environment and the internal control factors as regularly as appropriate. The risks related to the business environment and the control factors must be assessed whenever there is a significant change in the risk profile (change of the scope of activities, other significant changes) but at least once every year. The frequency must reflect the risk profile of the institution. The validation of the consideration of relevant factors may be performed by comparison to internal and external loss data.

118. In order to ensure relevance and adequacy, the institution must demonstrate that it can appropriately manage qualitative data, properly eliminate errors, and that qualitative information is relevant, furthermore, the institution must demonstrate the purpose of risk assessment (e.g., to obtain forward-looking information).

119. The appropriate treatment of qualitative data means that the institution must ensure that the use of qualitative data can be made conform to other elements of risk management[55]. The elimination of risks aims at managing the issue of differences between the risk awareness of risk assessment participants. Assessment is appropriate if it individually identifies the people participating in risk assessment and demonstrates why each person is fit for this task.[56]

120. Business and control factors may be used for multiple purposes, including the following examples[57]:

- Integration into risk measurement;

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[54] CRD Annex X Part 3 Subchapter 1.2.5; DOPR Article 8 Paragraph (10)
[55] Example: The same categories are to be considered in the course of data collection.
[56] Example: Risk assessment personnel are validated and assessed separately.
[57] The listing is not exclusive.

- Use for risk management considerations;
- "Validation" of internal data collection, etc.

Use of Scenario Analysis

121. The purpose of scenario analysis is to ensure that the institution applying an Advanced Measurement Approach is able to capture extreme events both in terms of sector-specific and institution-specific factors.

122. The use of scenario analysis should not be restricted to the evaluation of exposures to high-severity events, as it should also be a useful source of information on the institution's overall operational risk exposure.

123. In order to generate credible and reliable results, institutions should make sure that their processes used to generate data for analyses are highly repeatable, and that quantitative and qualitative results are consistently prepared and used.

124. Institutions must strive to ensure that the analysis allows as little subjectivity and distortions as possible.

125. The assumptions underlying the analyses and the process by which the methodology for scenario analysis is constructed should be well documented.

126. Institutions in the sector are continuously enhancing their scenario analysis methodologies, and the HFSA therefore does not wish to specify a generally applicable analytical framework.

127. As a minimum, at least the following aspects are to be examined in the course of supervisory validation:

    - The preparation of scenarios: the adequacy of operational risk scenarios, the consistency and relevance of scenarios and the coverage of all material operational risks, as well as whether scenario analysis has sufficient depth;
    - Scenario assessment: the methodology for the assessment of scenarios, the involvement of experts, the information obtained in the course of assessment;
    - Data quality: the comparability of the results of the assessment of scenarios, the ability to screen out errors,
    - Suitability for integration into the modelling framework: how parameter values are defined, the methodological framework for preparing model outputs, the robustness of the model framework.

128. In the course of scenario analysis the institution must ensure consistency with the other elements of the AMA.

2.4 Considering Insurance and Other Mechanisms for Risk Transfer[58]

129. Operational risk insurance and other transfer mechanisms that allow for an effective transfer of any operational risks that may arise, constitute the only acceptable instruments allowed for the mitigation of the operational risk capital requirement. It is to be noted, that

[58] CRD Annex X Part 3 Subchapter 2

risk mitigation solutions for operational risk may only be considered with the use of the AMA method, while the same option is not available if simpler approaches are used.

130. In line with general insurance concepts, insurance activity is the undertaking of obligations based on an insurance contract, whereby the insuring institution establishes a risk partnership, assesses insurable risks, specifies the consideration (premium) for assuming the risk, assumes the risk based on the legal relationship created and delivers the related services. The category of other risk transfer mechanisms fundamentally includes products where risk is transferred using capital market instruments.[59]

131. In order to assess the institution assuming the risk, the HFSA examines its compliance with the following criteria:

- It is authorised and has a license to provide insurance or re-insurance services;
- It has a claims paying ability rating of at least 3 (this corresponds to a paying ability rating according to credit quality steps as used for the assessment of credit risk);
- Risks are assumed by a third (independent) party, or the consolidated risks are to be transferred to a third party if assumed by a subsidiary or a "captive" insurance firm.[60]

132. The following requirements must be met in order to be able to recognise and validate the risk reduction effect of the insurance policy:

- The insurance (risk transfer) agreement must have an initial term of not less than one year;
- The termination notice period should be 90 days (3 months) at least;
- There can be no exclusions, not even in a bankruptcy situation or if a receiver or liquidator is appointed.

133. The institution must adopt the following procedure to recognise the risk mitigating effects of insurance. The HFSA audits compliance with these requirements:

Residual Term: Appropriate haircuts must be made for policies with a residual term of less than one year. No haircut is required however, if the contract contains an automatic renewal clause with a minimum notice period of one year. A haircut of 100% is to be applied if the residual term is 90 days or less.

Notice Period: A haircut is to be made if the notice period for termination is less than one year.

Uncertainty of payment or uncoordinated insurance coverage: An appropriate discount factor or haircut must be used if, under the terms of the insurance contract, uncertainty of payment is possible (deductible – consideration of non-comprehensive compensation, late payment, counterparty risk), or if there is a mismatch between the various insurance policies of the institution (such as property insurance and liability insurance).

Impact on the operational risk capital requirement: The reduction in the capital requirement for operational risk arising from the recognition of insurance and other risk transfer mechanisms may not exceed 20% of the capital requirement for operational risk before the recognition of risk mitigation techniques. The HFSA, in the course of its

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[59] Example: disaster policies, other financial derivatives.

[60] This latter situation occurs for instance when a specific banking group insures the risks of the group members (for economies of scale) through a "captive" institution that appears on the insurance market to transfer the risks such as by way of reinsurance.

validation procedure, examines the methodology of risk mitigation. The following is a non-exclusive example for a method for the recognition of risk mitigation:

- Allocation of risk events to insurance policies;
- Definition of the allocation of gross loss;
- Application of the impact of insurance on the losses allocated;
- Calculation of residual risks after insurance, and the subsequent calculation of the capital requirement based on net losses.

2.5 Use of an AMA on a Group-Wide Basis[61]

134. When a parent institution domiciled in the EU and its subsidiaries, or the subsidiaries of a financial holding firm domiciled in the EU intend to use an Advanced Measurement Approach for the calculation of capital requirements for operational risks, the application submitted to the HFSA must include a description of the methodology that they intend to use to allocate the capital requirement for operational risk and the capital itself among the different members of the group.[62]

135. Institutions must use this methodology to allocate capital, setting out from the consolidated group-level requirements towards the subsidiaries that are involved in the consolidated calculation of capital using the AMA.

136. Institutions must demonstrate that their allocation methodologies are reliable and reasonable, and that they are applied in practice in a consistent, fair and integrated fashion.

137. Institutions are strongly encouraged to move towards allocation mechanisms that, at all times, properly reflect the operational risks of their individual subsidiaries and their actual contributions to the consolidated capital requirement. The assessment of the allocation mechanism is a significant component of the approval procedures of the home and relevant host supervisory authorities.

138. In order to accept the capital allocation mechanism on a group-wide basis, the HFSA will examine whether the effects of diversification are quantified and allocated to the underlying factors in the risk management system, and if yes, in what manner.

139. The ACI[63] has adopted the option allowed for supervisory authorities by the CRD[64] to consider the entire group as the basis in order to determine whether the criteria for the use of the Advanced Measurement Approach are met, for groups that apply a uniform Advanced Measurement Approach on the group level and that allocate operational risk capital to the subsidiaries on this basis, and the HFSA will not audit compliance with regulations that are thus irrelevant for the individual domestic subsidiaries (such as if there is no modelling on the level of the individual subsidiary).

2.6 Organisational Requirements related to the Advanced Measurement Approach – Corporate Governance Issues

140. The GL 10 Guidelines supplement and structure the provisions of the CRD for corporate governance. The risk management organisation for operational risk must be different from the risk management organisation for credit risk due to differences in the nature of these

[61] CRD Annex X Part 3 Sections 30 and 31; DOPR Article 10; GL 10 Section 597
[62] GL 10 Section 597
[63] ACI Article 76/J Paragraph (9)
[64] CRD Article 105 Section 4

risks. Operational risks are present in all activities and all units of the organisation. For institutions that intend to use the AMA to satisfy the requirements concerning operational risk the HFSA will examine the organisational structure for the management of operational risk before granting an authorisation.

141. Institutions must prepare regular reporting on their operational risk exposures and losses. The reports must be approved by a supervisory and management body. In order to improve the efficiency and effectiveness of operational risk management, the Board of Directors may set up special risk committees to perform some of these functions. The organisation approving the reports must have powers to allocate financial resources to the operational risk framework and to understand issues that arise in relation to the operational risk framework. These may include the following:

- Activities aimed at identifying, measuring, monitoring, controlling or mitigating operational risk;
- Proactive risk management strategies and policies;
- The organisational structure for control functions;
- Specification of the acceptable level of risk.

142. Both the Board of Directors and the executive management must be properly involved in risk management so that they have an understanding of control and measurement processes to ensure that the management and measurement of operational risk is efficient.

143. The HFSA will pay special attention to the following internal governance aspects:

Reporting system: Reporting on operational risk should be an essential part of the internal reporting system. Reports should be sent to the Board of Directors, executive management, internal audit and the risk committees (is established). The frequency and the contents of such reports should be approved by both the Board of Directors and the executive management. It is the responsibility of executive management to ensure the suitability of the reporting framework. The scope of information included in the reports varies according to the nature, size and degree of complexity of the business. The more complex and in parallel, the more riskier the business, the more information may be required.

Operational risk management function: The institution must have an independent risk management function for the management of operational risk. With regard to its position within the organisation, the function for the management of operational risk must be aligned with the institution's own organisation structure. Appropriate operations and controls must be ensured in connection with the operation of decentralised operational risk experts.

The role of internal audit: The processes and measurement systems for the management of operational risk must be regularly audited by internal or external auditors. Internal audit must continuously monitor the adequacy of the operational risk framework. Cooperation with the internal audit function is possible, but the primary consideration is to ensure the independence of internal audit. Internal audit should not participate in day-to-day operational risk management processes.

3 Partial Use of Various Operational Risk Approaches[65]

3.1 Use of an Advanced Measurement Approach in Combination with Other Approaches

144. A credit institution may use the Advanced Measurement Approach in combination with either the Basic Indicator Approach or the Standardised Approach subject to the following conditions:

The system must capture all of the institution's operational risks. The HFSA will accept an approach, by which the institution can ensure a comprehensive coverage for operational risk management using an allocation by the various activities, geographical regions, legal structures or other internal principles;

The application criteria must be met for activities covered by the Standardised Approach and the Advanced Measurement Approach.

145. On the basis of the authorisation contained in the CRD and the DOPR, the HFSA imposes further conditions for the combined use of the Advanced Measurement Approach as listed under Section 82 of Subchapter 2.1.5 (Validation of the Roll-out Plan) of Part II of these Validation Guidelines[66].

3.2 Combined Use of the Basic Indicator Approach and the Standardised Approach

146. An institution may use a combination of the Basic Indicator Approach and the Standardised Approach only in the case of a merger or acquisition and only if it meets the conditions – such as the requirement for an agreed time schedule – contained in the authorisation issued by the HFSA[67].

3.3 Various Partial Use Combinations[68]

147. The CRD and the DOPR allow for a wide range of partial use combinations pursuant to the above subchapters 3.1 and 3.2. However, the combined use of the individual approaches raises an issue as to how the capital requirements calculated using the various approaches should be totalled for the calculation of the total capital requirement for operational risk for the entire institution or for the group of institutions.

148. The relevant domestic statutory regulations address the issue of capital adequacy approaches and calculations fundamentally on the level of the solo institution and Chapter XIV of the ACI contains separate provisions for compliance on the consolidated level. Despite the fact that the text of the relevant statutory regulations makes no detailed distinction between calculations made by a group (consolidated) and those made by solo legal entities, it is still expedient to make such a distinction. In addition to this, effective regulations do not explicitly regulate whether a parent company (or group) otherwise not using an Advanced Approach may include in its consolidated capital requirement the results of the solo capital requirement calculations of its subsidiaries prepared using an Advanced Measurement Approach.

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[65] CRD Annex X Part 4; DOPR Articles 11-12

[66] CRD Annex X Part 4 Section 1.2 Subsections a)-b); DOPR Article 11 Paragraph (2)

[67] DOPR Article 12

[68] GL 10 Chapter 4.1 on the Variations for the Combined Use of Approaches

149. Definitions to be used in the area of operational risk with regard to partial use (with special regard to the possibility to aggregate the capital requirements of the individual approaches):

„Partial use at consolidated level" means that different operational risk approaches are used in parallel by the parent and its various subsidiaries within the group;

„Partial use at solo level" means that different operational risk approaches are used in parallel for different business lines or different branches within the same legal entity. (Partial use at solo level is expected to be of lesser significance in Hungary than in the major member states of the EU due to the typical sizes of businesses).

Therefore, the issue regarding the above "partial use on the consolidated level" is not whether a subsidiary may calculate its capital requirement for operational risk on the solo level using an approach that is different from the approach used by the group of institutions for the calculation of capital requirements on the group level (which in practice is typically the method used by the institution that controls the group, i.e., the parent company), but whether the capital requirement of the subsidiary calculated using a different approach can be considered for the calculation of the consolidated capital requirement of the parent or the group of institutions. [69]

150. Since the Alternative Standardised Approach (ASA) is a special variant of the Standardised Approach (TSA), the use of the Alternative Indicator in possible combinations is treated in the same way as the Standardised Approach.

151. An institution using the Basic Indicator Approach or the Standardised Approach (with or without an alternative indicator) for its consolidated capital requirement calculation is allowed to include in its consolidated calculation the result of a capital requirement calculation by a subsidiary using the Advanced Measurement Approach.

152. An institution using the Standardised Approach (with or without an alternative indicator) for its consolidated capital requirement calculation is allowed to include in its consolidated calculation the result of a capital requirement calculation by a subsidiary using the Basic Indicator Approach. This combination option may be used in the case of a recent acquisition and under other extraordinary circumstances, subject to an authorisation by the HFSA.

153. An institution that opts for the Standardised Approach (with or without an alternative indicator) for the calculation of its solo capital requirement must meet the criteria for the use of the selected approach on a total (solo institution) basis, including all of its business lines and branches.

154. The below tables provide an overview of the partial use combinations on the group and the solo levels and indicate the appropriate methods for the calculation of capital requirements on the consolidated and solo levels.

[69] In similar, "partial use on the solo level" relates to the issue, whether an institution may use the calculation results obtained at the business line or branch level for the calculation of its capital requirement for operational risk on the solo level of the entire institution. However, it does not relate to whether the institution may be allowed to use certain calculation methods on the business line level or on the branch level (such as out of internal considerations, or as preparation for a future transition to a more refined approach).

Table 1 (Source: CEBS GL 10 on validation)
Group Level: Partial Use Combinations and „Consolidated Capital Requirement"

Group Level Approach Subsidiary Level Approach	Group Uses BIA	Group Uses TSA (or ASA)	Group Uses AMA
Company „A" locally uses BIA	-	Partial use acceptable	Partial use acceptable
Company „B" locally uses TSA or ASA	Partial use not acceptable	-	Partial use acceptable
Company „C" locally uses AMA	Partial use acceptable	Partial use acceptable	-

Table 2 (Source: CEBS GL 10 on validation)
Legal Entity Basis: Partial Use Combinations and „Solo Capital Requirement"

Business Line/Branch Approach	Legal Entity Uses BIA	Legal Entity Uses TSA or ASA	Legal Entity Uses AMA
Business Line/Branch „A" Uses BIA	-	Partial use not acceptable	Partial use acceptable in specially justified cases only
Business Line/Branch „B" Uses TSA/ASA	Partial use not acceptable	-	Partial use acceptable
Business Line/Branch „C" Uses AMA	Partial use not acceptable	Partial use not acceptable	-

4 Capital Requirements of Investment Firms[70]

155. The investment firms detailed below need not include operational risk capital requirements within their overall capital requirement, this privilege however does not exempt them from meeting the other qualitative requirements.

156. As a general rule, the overall capital requirement includes the same components as in the case of credit institutions[71], being the sum of the following factors:

- Capital requirement for credit risk and dilution risk;
- Capital requirement for risks related to the trading book;
- Capital requirement for exchange rate risk and commodity risk[72];

[70] Directive 2006/49/EC Articles 20-21
[71] CRD Article 75

- Capital requirement for operational risk.

157. However, the HFSA may allow investment firms that are not authorised to provide investment services[73] to have a guarantee capital that is at all times at least as high as the *higher*[74] of the following amounts:

- The sum of the relevant[75] capital requirements but NOT including the capital requirement for operational risk;
- The amount specified under Article 21 of these Guidelines, i.e., one quarter of the fixed overheads for the previous year. [76]

$$Total\_capital\_requirement \geq \max(C_c + C_{tb} + C_d; Cost_0 * 0{,}25)$$

Where:
C_o: capital requirement for operational risk
C_c: capital requirement for credit risk
C_{tb}: capital requirement for risks related to the trading book
C_o: capital requirement for exchange rate risk
$Cost_0$: fixed overheads for the prior year

158. Firms eligible for preferential treatment include firms that are not authorised to provide the following services[77]:

- Trading on their own account; and
- Underwriting of financial instruments and/or the placement of financial instruments on a firm commitment basis.

159. The HFSA will allow investment firms in possession of the required initial capital (EUR 730,000) but falling into one of the below categories to have a guarantee capital greater than or equal to the *sum* of the following at all times:

- The sum of the relevant[78] capital requirements but NOT including the capital requirement for operational risk;
- The amount specified under Article 21 of this Directive, i.e., one quarter of the preceding year's fixed overheads.

$$Total\_capital\_requirement \geq C_c + C_{tb} + C_d + Cost_0 * 0{,}25)$$

Where:
C_o: capital requirement for operational risk
C_c: capital requirement for credit risk
C_{tb}: capital requirement for risks related to the trading book
C_o: capital requirement for exchange rate risk
$Cost_0$: fixed overheads for the prior year

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[72] Directive 2006/49/EC Article 18
[73] The list contained under Directive 2004/39/EC Annex I Section A Items 3 and 6
[74] It is important to note that the actual translation of the CRD into Hungarian available at the date of the preparation of these Guidelines is not good. Based on the original 2006/49 the institution must have the *higher* of the two values (at least).
[75] CRD Article 75 Sections a)–c)
[76] The term used in the Hungarian text of these Guidelines („általános működési költség") originates from the current available translation of the CRD into Hungarian. The original term „fixed overhead" is better translated into Hungarian as „általános igazgatási költség".
[77] Directive 2004/39/EC Annex I Section A Items 3 and 6
[78] CRD Article 75 Sections a)–c)

160. Entities in the following categories are eligible for favourable treatment:

- Investment firms that deal on their own account only for the purpose of fulfilling or executing a client order or for the purpose of gaining entrance to a clearing and settlement system or a recognised exchange, if acting in an agency capacity or executing a client order;
- Investment firms:
  - That do not dispose over money or securities owned by clients;
  - That undertake dealing only on their own account;
  - That have no external customers;
  - Whose transactions are executed and settled under the responsibility of a clearing institution and are guaranteed by that clearing institution.

161. Irrespective of the method used for capital calculation, firms must comply with all requirements concerning operational risk[79], including the following: they must introduce procedures and policies for operational risk to assess and manage exposures, which should also contain infrequent but severe events, and they must also prepare emergency and business continuity plans.

4.1 Transitional Derogation:

162. Pursuant to Directive 2006/49/EC Article 45b, by derogation from Article 20 (1) the HFSA may decide on a case-by-case basis, until 31 December 2011, not to impose the capital requirements arising from CRD Article 75 Section d) (i.e., for operational risk) on investment firms that are not subject to Article 20 Paragraphs (2) and (3), but whose total trading book positions never exceed EUR 50 million and whose average number of affected employees does not exceed 100 during the fiscal year.

163. Instead, the following procedure applies. The capital requirement must reach at least the *lower* of the following:

- The capital requirements arising from Article 75 Section d) (i.e., operational risk capital requirements); and
- A 12/88[ths] portion of the higher of the following values:
- The totality of the capital requirements listed under Article 75 Sections a)-c) (credit risk, trading book risk and exchange rate risk); and
- The amount specified under Article 21 (one quarter of fixed overheads), with consideration to Article 20 Section (4a).
- If the second point of the second paragraph applies, an incremental increase must be applied at least once every year.

164. The application of this derogation may not result in a reduction of the overall capital requirements of investment firms in comparison to the requirements as of 31 December 2006, unless such a reduction is justified by a reduction in the business volume of an investment firm.

[79] CRD Annex V

$$"Supplementary"\_capital\_requirement \geq \min(C_o;12/88*\max(C_c + C_{tb} + C_d;Cost_0*0,25))$$

Total capital requirement ≥ C_c + C_{tb} + C_d + „supplementary" capital requirement

Where:

C_o: capital requirement for operational risk

C_c: capital requirement for credit risk

C_{tb}: capital requirement for risks related to the trading book

C_o: capital requirement for exchange rate risk

$Cost_0$: fixed overheads for the prior year