Guidelines

Guidelines on the validation and review of Credit Rating Agencies' methodologies

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1 Scope

Who?

1. These guidelines apply to Credit Rating Agencies (CRAs) registered in accordance with the Regulation (EC) No 1060/2009 of the European Parliament and of the Council of 16 September 2009 on credit ratings agencies (as last amended by Regulation (EU) No 462/2013 – CRA Regulation). These guidelines do not apply to certified CRAs.

What?

2. These guidelines apply in relation to articles 8(3) and 8(5) of the CRA Regulation and to the Commission Delegated Regulation (EU) No 447/2012 of 21 March 2012 supplementing Regulation (EC) No 1060/2009 of the European Parliament and of the Council on credit rating agencies by laying down regulatory technical standards for the assessment of compliance of credit rating methodologies (RTS on rating methodologies).

When?

3. These guidelines will become effective two months after their publication on the European Securities and Markets Authority's (ESMA's) website in all official languages of the EU.

2 Definitions, Legislative References and Acronyms

CRAs	Registered Credit Rating Agencies
CRA Regulation	Regulation (EC) No 1060/2009 of the European Parliament and of the Council of 16 September 2009 on credit ratings agencies (as last amended by Regulation (EU) No 462/2013)
RTS on rating methodologies	Commission Delegated Regulation (EU) No 447/2012 of 21 March 2012 supplementing Regulation (EC) No 1060/2009 of the European Parliament and of the Council on credit rating agencies by laying down regulatory technical standards for the assessment of compliance of credit rating methodologies
ESMA	European Securities and Markets Authority
ESMA Regulation	Regulation (EU) No 1095/2010 of the European Parliament and of the Council of 24 November 2010 establishing a European Supervisory Authority (European Securities and Markets Authority), amending Decision No 716/2009/EC and repealing Commission Decision 2009/77/EC
CAP	Cumulative Accuracy Profile
ROC	Receiver Operator Characteristic

3 Purpose

4. The purpose of these guidelines is to clarify ESMA's expectations and ensure consistent application of Article 8(3) of the CRA Regulation which states that '*a credit rating agency shall use rating methodologies that are rigorous, systematic, continuous and subject to validation based on historical experience, including back testing*'. These guidelines focus on the last part of Article 8(3), i.e. '*subject to validation based on historical experience, including back testing*'. These guidelines also clarify ESMA's expectations and ensure consistent application of Article 8(5) of the CRA Regulation which states, *inter alia*, that a CRA shall '*review its credit ratings and methodologies on an ongoing basis and at least annually*'.

5. ESMA is of the view that guidelines on how CRAs should meet Articles 8(3) and 8(5) of the CRA Regulation will help to ensure a consistent application of validation and review measures for demonstrating the discriminatory power, predictive power and historical robustness of methodologies, as well as to identify measures that CRAs should implement when validating and reviewing methodologies with limited quantitative evidence.

6. These guidelines support the RTS on rating methodologies, which set out the rules to be used in the assessment of compliance of credit rating methodologies with the requirements laid down in Article 8(3) of the CRA Regulation, and in particular Articles 7 and 8 of the RTS on rating methodologies.

7. These guidelines clarify ESMA's expectations of the terms '*discriminatory power*', '*historical robustness*' and '*predictive power*' used in Article 7 of the RTS on rating methodologies. In addition, these guidelines also clarify ESMA's expectations as to how CRAs with limited quantitative evidence can ensure that their methodologies are '*sensible predictors of credit worthiness*', as stated in Article 8 of the RTS on rating methodologies while being exempted from complying with Article 7. Finally, ESMA also clarifies its expectations on how CRAs should meet the requirement in both Articles 7 and 8 of the RTS on rating methodologies that the CRAs shall have '*processes in place to ensure that systemic credit rating anomalies highlighted by back-testing are identified and are appropriately addressed*'.

8. These guidelines refer to both the validation and review of a CRA's methodologies. In the remainder of this document both the words 'validation' and 'review' are used interchangeably instead of 'validation and review' for ease of reading.

9. The word 'methodology' is used in this document as to mean all components that a credit rating methodology may consist of, including models, key rating assumptions and criteria.

10. ESMA recognizes that good quality validation is the outcome of the processes, governance, measures, and equally important, the expert judgment used by CRAs. ESMA is of the view that good quality validation strikes a balance between the

application of quantitative and qualitative techniques. ESMA understands that both kinds of techniques can provide valuable insight into the performance of methodologies, and that, dependent on the circumstances (e.g. asset class or data availability), the degree to which quantitative and qualitative techniques are applied may differ. ESMA is of the view that the validation of the methodologies should include both qualitative and quantitative techniques. ESMA does not consider as a qualitative validation technique the subjective assessment of methodologies by the CRAs' responsible persons without explanation of the considerations and conclusions made.

11. ESMA has focused these guidelines on quantitative measures, as this is where the industry appears least clear on ESMA's expectations. A benefit of quantitative measures is that they provide further objectivity to the validation process, particularly as it can be harder to recognize and articulate the inherent assumptions used in interpreting qualitative measures. However, this does not mean that ESMA believes that quantitative measures should solely drive a validation process and ESMA does not expect that validation outcomes should mechanistically rely on quantitative measures.

12. These guidelines are solely in relation to the validation of the CRAs' methodologies and, per article 23 of the CRA Regulation, do not imply or suggest interference with the content of credit ratings or methodologies.

4 Compliance and reporting obligations

4.1 Status of the guidelines

13. This document contains guidelines pursuant to Article 16 of Regulation (EU) No 1095/2010 of the European Parliament and of the Council of 24 November 2010 establishing a European Supervisory Authority (European Securities and Markets Authority), amending Decision No 716/2009/EC and repealing Commission Decision 2009/77/EC (ESMA Regulation). In accordance with Article 16(3) of the ESMA Regulation, CRAs must make every effort to comply with the guidelines.

4.2 Reporting requirements

14. ESMA will assess the application of these guidelines by the CRAs through its ongoing supervision and monitoring of CRAs' periodic reporting to ESMA. These guidelines apply without prejudice to the guidelines on periodic information to be submitted to ESMA by CRAs (ESMA/2015/609) which require CRAs to report semi-annually the internal review function reports and the outcomes of the methodology reviews, including information on any back-testing performed in the period, details of any key findings as well as actions taken by the CRA as a result.

5 Guidelines on the validation and review of CRAs' methodologies

15. The guidelines include:

    a. Measures that ESMA *typically* expects a CRA to use.

    b. *Examples of complementary* measures which a CRA should consider, among other appropriate complementary measures.

16. The measures[1] that will be used as part of the validation process should be included in a CRA's validation documentation. Where a CRA does not use measures that ESMA typically expects, a CRA should document its justification for not using these measures and how the measures it has chosen meet the regulatory requirements (Articles 8(3) and 8(5) of the CRA Regulation and Articles 7 and 8 of the RTS on rating methodologies), as clarified in these guidelines.

5.1 Validation of Methodologies with Sufficient Quantitative Evidence

5.1.1 Discriminatory Power

17. The discriminatory power of a methodology relates to its ability to rank order the rated entities in accordance to their future status (defaulted or not defaulted) at a predefined time horizon.

18. In demonstrating the discriminatory power of a methodology, ESMA typically expects a CRA to use the cumulative accuracy profile (CAP) or the receiver operator characteristic (ROC) curve in conjunction with the accuracy ratio[2].

19. A CRA should consider complementing the above measures with additional quantitative measures, for example the Kolmogorov-Smirnov statistic, and qualitative measures, such as the distribution of the observed default rates.

5.1.2 Predictive Power

20. The predictive power of a methodology can be demonstrated by comparing the expected behaviour of the credit ratings to the observed results.

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[1] The term "measures" is used throughout the guidelines in the sense of the CRA Regulation, i.e. internal measures taken by a CRA in order to comply with such Regulation.
[2] In these guidelines, the term 'accuracy ratio' also encompasses the Gini coefficient or other similar measures.

21. For performing this comparison, ESMA typically expects a CRA to define internally its expectations (absolute numbers or ranges) per credit rating category with regard to the measure of creditworthiness its credit ratings refer to.

22. A CRA may use different approaches for defining its internal expectations (e.g. by statistical calculation or by reference to the historical performance of its credit ratings).

23. For credit ratings which refer to default probabilities, ESMA typically expects a CRA to compare the expected probabilities of default to the observed default rates using the binomial and the chi-square tests. A CRA should consider complementing these measures with further quantitative measures, for example the Brier Score or the Vasicek one-factor model test, as well as any qualitative measures that are most appropriate for the methodologies' validation.

24. For credit ratings which refer to creditworthiness measures other than default probabilities, ESMA typically expects a CRA to compare the expected behaviour of the credit ratings to the observed results using relevant quantitative measures and to document the rationale for its choices. A CRA should consider complementing these measures with further relevant quantitative measures as well as any qualitative measures that are most appropriate for the methodologies' validation.

5.1.3 Historical Robustness

25. The historical robustness of a methodology can be demonstrated by assessing other dimensions that do not relate to its discriminatory or predictive power, such as the stability of the credit ratings assigned by the methodology, the stability of the characteristics of the rated entities / instruments covered by the methodology and the distribution of the assigned credit ratings.

26. As a quantitative measure, ESMA typically expects a CRA to demonstrate the stability of the credit ratings assigned by its methodologies by producing transition (migration) matrices and analyzing the movement of the credit ratings. Examples of this type of analysis include the upgrade / downgrade / diagonal ratios as well as statistics that demonstrate the absolute degree of change, the direction of change or a combination.

27. A CRA should consider complementing these measures with further qualitative analysis, for example the analysis of the ratings' distributions, univariate analysis of key determinants of credit ratings, the benchmarking of the ratings to external credit risk measures (e.g. ratings of other CRAs, credit default swaps spreads, bond yields), and the use of quantitative measures such as the Population / System Stability Index.

5.2 Validation of Methodologies with Limited Quantitative Evidence

28. A CRA should establish itself the minimum number of ratings and / or defaults that a methodology should have in order to be validated in accordance with Article 7 of the RTS on rating methodologies. CRAs should internally establish the relevant policies and procedures for deciding if there is limited quantitative evidence to support the predictive power of a methodology. These policies and procedures should at a minimum define the responsible persons / parties for taking this decision as well as the relevant criteria that this decision will be based on.

29. A CRA should, as part of the process of validating its methodologies with limited quantitative evidence, consider enhancing the data sample in order to, if possible, apply Article 7 of the RTS on rating methodologies. A CRA should consider data enhancement techniques (subject to, where applicable, verifying data quality and safeguarding the characteristics of the rated population, including its default rate), for example:

    o expanding the data sample with the use of third party data (if available);

    o combining (if meaningful) asset classes or sub-asset classes with similar risk characteristics in order to perform joint validation assessments; or

    o creating (if possible) hypothetical transactions that can be used to expand the available data.

    A CRA should document its decision making process for determining whether or not to use data enhancement techniques.

30. A CRA should also consider techniques enabling it to perform quantitative measures for demonstrating the discriminatory power of its methodologies. A CRA should consider relevant techniques, for example:

    o the use of a 'relaxed' default definition for the purposes of validation;

    o combining rating categories; or

    o using an extended time period.

    A CRA should document its decision making process and set out the rationale for the methods it uses to enhance its ability to perform quantitative measures for demonstrating the discriminatory power of its methodologies, including whether it has rejected the use of a method.

31. ESMA typically expects a CRA to produce transition (migration) matrices and analyze the movement of the credit ratings as well as benchmark the ratings to external credit risk measures (e.g. ratings of other CRAs, credit default swaps spreads, bond yields).

32. A CRA should consider complementing these measures with other historical robustness measures such as those noted in section 5.1.3.

5.3 Identifying and addressing anomalies

33. A CRA should internally set thresholds for its quantitative validation techniques in order to identify and address potential anomalies highlighted by back-testing.

34. These thresholds should be appropriately documented and recorded. The Review Function of the CRAs should be responsible for deciding these thresholds, by making sure that they are i) relevant to the methodology being validated, ii) a challenging and consistently applied component of the validation process by being set at appropriate levels and iii) adequately justified.

35. A CRA should provide appropriate justifications if thresholds differ per asset class, especially in cases where the rating categories have the same characteristics across asset classes.

36. A CRA should predefine and justify the actions that deviations from the thresholds will result in. ESMA does not expect that a breach of a threshold will always lead to methodology changes.

37. A CRA should distinguish systemic deviations from non-systemic ones and explain how the predefined actions would differ in such a case.

38. In case a CRA chooses to set thresholds for its qualitative validation techniques, the above paragraphs under this section apply.