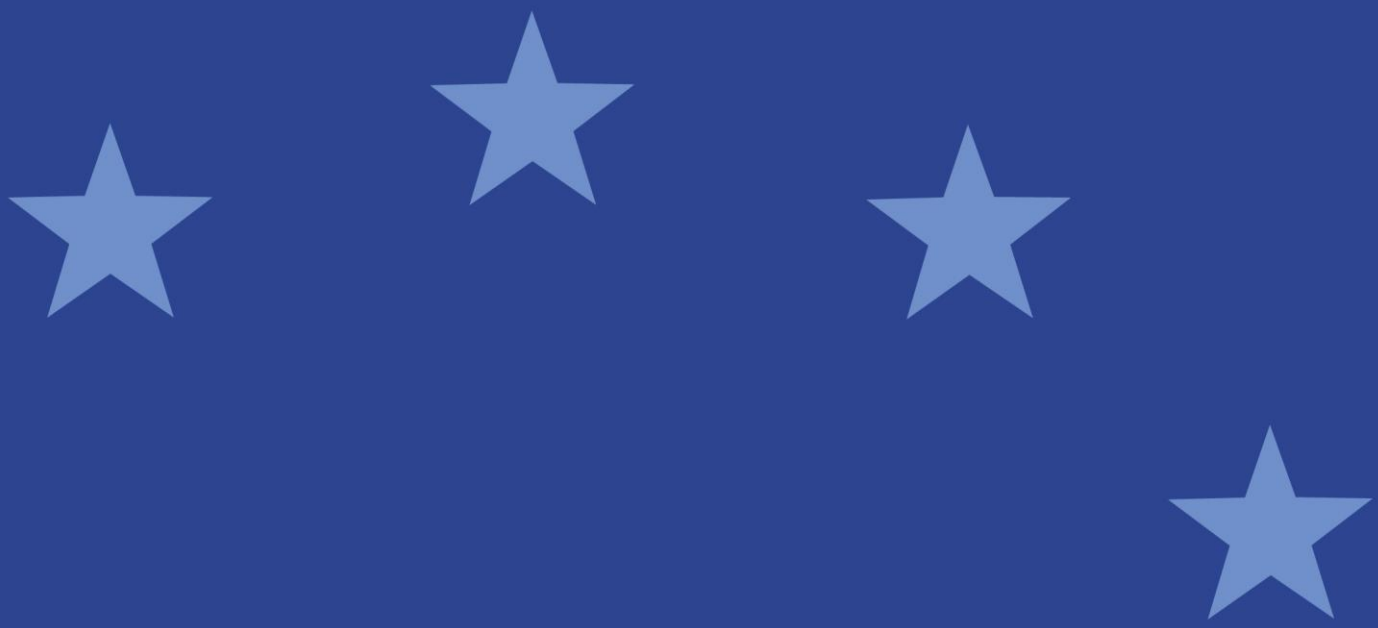
esma European Securities and Markets Authority

Consultation Paper

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



13 July 2016 | ESMA/2016/1121

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Responding to this paper

ESMA invites comments on all matters in this paper and in particular on the specific questions summarised in Annex I. Comments are most helpful if they:

- respond to the question stated;
- indicate the specific question to which the comment relates;
- contain a clear rationale; and
- describe any alternatives ESMA should consider.

ESMA will consider all comments received by **22 August 2016.**

All contributions should be submitted online at www.esma.europa.eu under the heading 'Your input - Consultations'.

Publication of responses

All contributions received will be published following the close of the consultation, unless you request otherwise. Please clearly and prominently indicate in your submission any part you do not wish to be publically disclosed. A standard confidentiality statement in an email message will not be treated as a request for non-disclosure. A confidential response may be requested from us in accordance with ESMA's rules on access to documents. We may consult you if we receive such a request. Any decision we make not to disclose the response is reviewable by ESMA's Board of Appeal and the European Ombudsman.

The collection of confidential responses is without prejudice to the scope of Regulation (EC) No 1049/2001[1]. Possible requests for access to documents will be dealt in compliance with the requirements and obligations laid down in Regulation (EC) No 1049/2001.

Data protection

Information on data protection can be found at https://www.esma.europa.eu/data-protection under the heading Data Protection.

Who should read this paper

This paper may be of interest to users of credit ratings, credit rating agencies and entities interested in applying to be a registered credit rating agency.

[1] Regulation (EC) No 1049/2001 of the European Parliament and of the Council of 30 May 2001 regarding public access to European Parliament, Council and Commission documents, OJ L 145, 31.5.2001, p. 43–48.

Definitions, Legislative References and Acronyms

ESMA	European Securities and Markets Authority
CRAs	Registered Credit Rating Agencies
Discussion Paper	Discussion Paper on the validation and review of Credit Rating Agencies' methodologies
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
Proposed Guidelines	The proposed guidelines on the validation and review of Credit Rating Agencies' methodologies
Feedback Statement	Feedback Statement on the Discussion Paper on the validation and review of credit rating agencies' methodologies
ROC	Receiver Operator Characteristic
CAP	Cumulative Accuracy Profile

1 Executive Summary

Reasons for publication

The European Securities and Markets Authority (ESMA) published on 17 November 2015 a Discussion Paper on the validation and review of Credit Rating Agencies (CRAs)' methodologies (Discussion Paper)[2]. ESMA held an Open Hearing on this topic on 25 January 2016.

ESMA has decided to consult on guidelines on the validation and review of CRAs' methodologies based on its supervisory experience of CRAs' application of Articles 8(3) and 8(5) of the CRA Regulation and Articles 7 and 8 of the RTS on rating methodologies, and the views expressed to ESMA following the Discussion Paper. The proposed guidelines on the validation and review of the CRAs' methodologies (Proposed Guidelines) reflect discussions with various stakeholders, including industry participants (mainly through feedback given to the relevant Discussion Paper and Open Hearing).

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 the 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.

The consultation paper does not revisit the feedback sought during the Discussion Paper phase. The consultation paper and the questions in it focus only on areas where ESMA proposes a further change to its views included in the Discussion Paper.

Contents

Section 2 contains a short summary of feedback received through the Discussion Paper process and the Proposed Guidelines.

Sections 2.1 and 2.2 describe general changes that ESMA proposes to make in its approach to maintain the proportionality of the Proposed Guidelines.

Sections 2.3, 2.4, and 2.5 describe at high level the feedback included in the Feedback Statement on the Discussion Paper on the validation and review of credit rating agencies' methodologies (Feedback Statement) to how CRAs should demonstrate the discriminatory power, predictive power and historical robustness of their methodologies, and how ESMA has drafted the Proposed Guidelines in response.

Section 2.6 summarizes feedback to the validation of methodologies with limited quantitative evidence and ESMA's Proposed Guidelines following this feedback, and Section 2.7

[2] ESMA/2015/1735 Discussion Paper on the validation and review of Credit Rating Agencies' methodologies https://www.esma.europa.eu/sites/default/files/library/2015-1735_discussion_paper_on_validation_final.pdf

summarizes comments received with regard to the identification and addressing of anomalies and ESMA's Proposed Guidelines in response to feedback received.

Annex I provides a summary of questions asked in this consultation paper, Annex II contains the draft cost-benefit analysis for the Proposed Guidelines and Annex III contains the Proposed Guidelines.

Next Steps

The consultation will be open for five weeks. ESMA will consider the feedback it receives to the consultation with a view to finalising the Proposed Guidelines and publishing a final report in Q1 2017.

2 Guidelines for the validation and review of credit rating agencies' methodologies

2.1 General remarks

1. Some respondents to the Discussion Paper expressed concern that an outcome of ESMA's proposals could be the introduction of purely quantitative parameters in the validation and review of rating methodologies. The respondents were concerned that this would exclude the benefits brought to the validation process from the use of qualitative measures and expert judgement applied by staff. This is not ESMA's intention. The Discussion Paper and the Proposed Guidelines are focused 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 recognise and articulate the inherent assumptions used in interpreting qualitative measures. However, ESMA believes that quantitative measures should not be the sole driver of a validation process and expects that CRAs do not mechanistically rely on quantitative outcomes in the validation process.

2. ESMA recognises that good quality validation is the outcome of the processes, governance, measures, and equally importantly, 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's view is that the validation of the methodologies should include both qualitative and quantitative techniques.

3. ESMA also recognises that all statistical tests / measures have certain assumptions and that these assumptions may not always fully reflect the environment in which CRAs issue credit ratings. ESMA notes, however, that the statistical tests / measures have the benefit that the assumptions can be clearly and transparently articulated when interpreted. ESMA expects that CRAs will apply expert judgment when interpreting the results of statistical tests / measures, including considering how the assumptions used and limitations in tests may affect the results.

4. In addition, there are other more complicated statistical tests / measures that address most of the limitations brought up by the respondents. ESMA invites the CRAs to explore these tests / measures in order to address their concerns.

5. ESMA has clarified the above in the Proposed Guidelines.

6. In the Discussion Paper, ESMA requested supporting data from respondents. In assessing the cost-benefit analysis of the Proposed Guidelines, ESMA would

appreciate any further insight from users and CRAs as to the potential costs and benefits of the Proposed Guidelines. Annex II contains the draft cost-benefit analysis for the Proposed Guidelines. Due to a lack of information on implied costs provided by respondents to the Discussion Paper, this cost-benefit analysis is qualitative in nature.

Question 1: Has ESMA captured all related costs and benefits in its analysis under Annex II?

2.2 ESMA's expectations

7. The Discussion Paper described quantitative measures as either ones that a CRA should use or as examples of complementary measures a CRA may choose to use. This approach was based on ESMA's supervisory experience, where ESMA saw a clear need to raise the industry practices in the area of quantitative measures, and chose the proposed measures to reflect current good industry practice.

8. Feedback received[3] suggested that there may be certain risks in elevating any particular measure to the position of a de facto standard measure, and that one measure should not be given preference over another. ESMA recognises that the same outcome can be achieved in setting out the measures it typically expects, and giving CRAs discretion in using any further complementary measures they may choose to apply. Where a CRA chooses to diverge from the measures ESMA typically expects to be used it should document its rationale, explaining how it otherwise intends to 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). Also the examples of complementary measures are not intended to be an exhaustive list. ESMA believes that the suite of measures that CRAs will use will ensure that there is no overreliance on one particular measure. This will include qualitative analysis and expert judgement, alongside the quantitative measures that ESMA expects.

Proposed Guidelines

9. The guidelines include:

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

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

10. The measures 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)

[3] Please see section 2.1 of the Feedback Statement for further detail on general feedback received.

and 8(5) of the CRA Regulation and Articles 7 and 8 of the RTS on rating methodologies), as clarified in these guidelines.

Question 2: Do you agree that it is appropriate to set out certain measures as ones that ESMA "typically expects"? If not, please explain why.

Question 3: Where a CRA diverges from measures ESMA typically expects to be used, do you agree that it should document its rationale and explain how it meets the regulatory requirements? If not, please explain why.

2.3 Discriminatory Power

11. Based on feedback received to the Discussion Paper[4], ESMA has made minor changes to this section. In the Discussion Paper, ESMA proposed that an example of a complementary measure could be the receiver operator characteristic (ROC) curve (along with a confusion matrix). Feedback received suggested that due to ROC curve's similarity to the cumulative accuracy profile (CAP) curve, it would be more appropriate to include the ROC curve as a measure ESMA typically expects to see, used interchangeably with the CAP curve. For CRAs already using the ROC curve rather than the CAP curve, this would remove the need to change to a different but similar measure. ESMA has also removed the confusion matrix as a complementary measure given the lack of industry familiarity with this measure as well as the move of the ROC curve as a measure that ESMA typically expects.

Proposed Guidelines

12. 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.

13. 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[5].

14. 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.

Question 4: Do you agree that where a CRA does not use the CAP curve, the ROC curve should be added as an alternative measure that ESMA should typically expect? If not, please explain why.

[4] Please see section 2.2 of the Feedback Statement for further detail on feedback received on discriminatory power.
[5] In these guidelines, the term 'accuracy ratio' also encompasses the gini coefficient or other similar measures.

2.4 Predictive Power

15. As described in the Feedback Statement[6], several respondents from the CRA industry stated that the quantitative / statistical measures and tests proposed as minimum techniques for validation, or noted as examples of complementary measures in the paper, were not relevant to their credit ratings. These respondents stated that this was because they did not attach to their credit ratings a specific probability of default, and that the description of predictive power used by ESMA in the Discussion Paper[7] could potentially change the definition of a credit rating and the intended meaning of credit ratings. The majority of respondents who expressed this view were CRAs who stated that their credit ratings were an ordinal measure of credit risk, and that the approach adopted by ESMA, particularly in reference to predictive power, implied a level of precision not intended in their credit ratings. It was argued that a consequence of the proposed minimum techniques regarding quantitative / statistical tests for demonstrating predictive power, could be that CRAs focus on targeted default rates, irrespective of the economic cycle, consequently introducing more volatility and mechanistic reliance in credit ratings. Furthermore, it was argued that in requesting this type of measures, ESMA may be perceived as interfering with the meaning of the credit ratings.

16. ESMA does not share the view that the measures it suggests would change the product that CRAs issuing ordinal credit ratings offer, for the following reasons:

    a. While ordinal ratings may be the primary objective for a number of CRAs, rank ordering is not the sole goal. For example, all CRAs take into account the default rates of their rating categories, even if the ordinal system is maintained, and the CRAs would be likely to consider these default rates under their validation process if they differ significantly from their expectations or past experience.

    b. Validation is an internal process and ESMA is not proposing that CRAs share any expectations of ratings behaviour (e.g. expected default probabilities) publicly.

    c. ESMA does not propose to require CRAs to establish specific expectations. ESMA has suggested that CRAs may establish expectations based on ranges per credit rating category for example, giving flexibility and allowing CRAs to implicitly recognize the impact of potential factors that could influence the expectations of the CRAs on rating behaviour.

[6] Please see section 2.3 of the Feedback Statement for further detail on feedback received on predictive power.
[7] Page 16, para 40 of the Discussion Paper: 'predictive power of a methodology can be demonstrated by comparing the expected behaviour of the ratings assigned from this methodology to the observed results. For performing this comparison, a CRA should define internally its expectations (absolute numbers or ranges) per rating category with regards to the measure of creditworthiness its ratings refer to'

d. The suggestion that this approach would result in greater credit rating volatility over-simplifies ESMA's approach. ESMA is not suggesting that CRAs should automate their approach so that if a rating category exceeds or falls below their expectations, the CRAs should change their methodology / credit ratings mechanistically. ESMA believes however that with the use of predictive power measures, a CRA will enhance its validation process and have a more consistent and objective approach with which to identify and assess when a methodology is not performing as expected, and decide on the appropriate next steps, if any.

e. ESMA does not intend to interfere with the content, product or rating philosophy of credit ratings or methodologies of the CRAs, as per Article 23 of 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).

17. ESMA will therefore maintain in the Proposed Guidelines the same approach and quantitative measures on predictive power as proposed in the Discussion Paper. ESMA does however recognise that some CRAs also find qualitative measures in the demonstration of predictive power useful. As a result, ESMA has therefore included qualitative measures under complementary measures.

Proposed Guidelines

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

19. 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).

20. 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 at the discretion of the CRA are most appropriate for the methodologies' validation.

21. 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.

Question 5: Do you agree that ESMA should include a reference to qualitative measures under potential complementary measures? If not, please explain why.

2.5 Historical Robustness

22. Respondents to the Discussion Paper were generally supportive of ESMA's proposals for the quantitative measures CRAs should use in demonstrating the historical robustness of their credit rating methodologies.

23. Feedback from respondents[8] included concerns on the Population / System Stability Index. For this reason, ESMA proposes to use this as an example of a complementary measure, rather than a measure ESMA typically expects. ESMA has also further elaborated in the Proposed Guidelines on how the movement of ratings can be analysed quantitatively.

Proposed Guidelines

24. 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.

25. 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 analysing 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.

26. 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.

Question 6: Do you agree that the Population / System Stability Index is more appropriate as a complementary measure? If not, please explain why.

2.6 Validation of Methodologies with Limited Quantitative Evidence

27. In this section of the Discussion Paper, ESMA proposed a number of measures that CRAs could *consider* before establishing that they had limited quantitative evidence to

[8] Please see section 2.4 of the Feedback Statement for further details on feedback received on historical robustness

validate a methodology. As described in the Feedback Statement[9], the majority of concerns expressed by respondents centres around the applicability of the measures used as examples in all instances.

28. ESMA recognises that the examples used in the Discussion Paper of measures that CRAs could use when considering data enhancement, are not applicable in all instances. However, based on the overall feedback received, ESMA believes that they are nonetheless useful examples for the industry and has not changed its approach to the one adopted in the Discussion Paper. ESMA stresses that it is ultimately for a CRA to document and determine whether a data enhancement technique is useful and the inclusion of these examples in the Proposed Guidelines does not make these methods obligatory. ESMA has clarified in the text of the Proposed Guidelines that where a CRA chooses to use data enhancement, it should be subject to verifying data quality and safeguarding the characteristics of the rated population, including its default rate.

Proposed Guidelines

29. 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 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). 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.

30. 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, for example:

    - expanding the data sample with the use of third party data (if available and subject to verifying data quality and safeguarding the characteristics of the rated population, including its default rate);

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

[9] Please see section 2.5 of the Feedback Statement for further detail on feedback received on the validation of methodologies with limited quantitative evidence

- 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.

31. 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:

    - the use of a 'relaxed' default definition for the purposes of validation;
    - combining rating categories; or
    - 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 any method.

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

33. A CRA should consider complementing these measures with other historical robustness measures such as those noted in the section of 'Historical Robustness'.

Question 7: Do you agree that where a CRA chooses to use data enhancement techniques it should be subject to verifying data quality and safeguarding the characteristics of the rated population, including its default rate? If not, please explain why.

2.7 Identifying and addressing anomalies

34. CRA respondents and users of ratings agreed that predefined actions should be documented by CRAs for when the thresholds are met. The main concern from respondents[10] was that the use of thresholds for identifying and addressing anomalies should not result in mechanistic actions. ESMA agrees with this view, and believes that the documentation of potential actions in advance of validation will increase the objectivity and consistency of validation. In order for this objectivity and consistency to be carried through in both the use of quantitative and qualitative measures, ESMA

[10] Please see section 2.6 of the Feedback Statement for further detail on the feedback received for identifying and addressing anomalies

proposes that where a CRA also chooses to set thresholds for its qualitative validation techniques, the same approach should be adopted as per for quantitative measures.

Proposed Guidelines

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

36. 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.

37. 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.

38. 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.

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

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

Question 8: Do you agree that a CRA needs to adopt a consistent approach in setting thresholds for both qualitative and quantitative validation techniques? If not, please explain why.

Annex I: Summary of questions

Q1:	Has ESMA captured all related costs and benefits in its analysis under Annex II?
Q2:	Do you agree that it is appropriate to set out certain measures as ones that ESMA "typically expects"? If not, please explain why.
Q3	Where a CRA diverges from measures ESMA typically expects to be used, do you agree that it should document its rationale and explain how it meets the regulatory requirements? If not, please explain why.
Q4:	Do you agree that where a CRA does not use the CAP curve, the ROC curve should be added as an alternative measure that ESMA should typically expect? If not, please explain why.
Q5:	Do you agree that ESMA should include a reference to qualitative measures under potential complementary measures? If not, please explain why.
Q6:	Do you agree that the Population / System Stability Index is more appropriate as a complementary measure? If not, please explain why.
Q7:	Do you agree that where a CRA chooses to use data enhancement techniques it should be subject to verifying data quality and safeguarding the characteristics of the rated population, including its default rate? If not, please explain why.
Q8:	Do you agree that a CRA needs to adopt a consistent approach in setting thresholds for both qualitative and quantitative validation techniques? If not, please explain why.

Annex II: Preliminary high-level cost-benefit analysis

These Proposed Guidelines outline how CRAs may demonstrate rating methodologies' 'discriminatory power', 'historical robustness', 'predictive power' or that their methodologies are 'sensible predictors of credit worthiness'. This is as part of meeting the requirements set out in Articles 8(3) and 8(5) of the CRA Regulation and Articles 7 and 8 of the RTS on rating methodologies. In addition, the Proposed Guidelines set out 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'*.

Due to a lack of information on implied costs provided by respondents to the Discussion Paper, this cost-benefit analysis is qualitative in nature.

	Description
Benefits	The Proposed Guidelines are aimed at helping to ensure the 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. The Proposed Guidelines will provide clarity to industry of ESMA's expectations, but will also be useful to entities considering applying for registration as a CRA. The main benefit from the Proposed Guidelines would be the increased quality in the use of quantitative measures in validation across the industry. This should help improve the overall quality of validation performed by CRAs and subsequently the quality of credit rating methodologies and credit ratings, which would result in a benefit to users of ratings.
Compliance costs One off	It should be noted that the costs for CRAs related to validation arise from Level 1 and Level 2 provisions. The Proposed Guidelines will not burden the CRAs with any additional cost, as they do not set forth any additional requirement for them. However, some CRAs may need to establish additional quantitative measures in order to meet the requirements of the Proposed Guidelines where their current approaches cannot be demonstrated to result in the same outcome as the outcome of the measures ESMA

On-going	*typically expects*. This may require additional resource in their Review Functions and may also result in training costs for staff. Where CRAs have identified a need to use further quantitative measures in order to meet the requirements of the Regulation, this may lead to the need to employ increased resource and also to further train staff. CRAs may also have to perform further documentation of decisions. This should be incorporated into already established procedures, so a minimal effect is expected.

Annex III: Proposed Guidelines

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 the 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 recognises 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 recognise 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.

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[11] 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[12].

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. 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.

[11] 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.
[12] In these guidelines, the term 'accuracy ratio' also encompasses the gini coefficient or other similar measures.

21. 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).

22. 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 at the discretion of the CRA are most appropriate for the methodologies' validation.

23. 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.

5.1.3 Historical Robustness

24. 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.

25. 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 analysing 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.

26. 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

27. 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.

28. 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, for example:

    - expanding the data sample with the use of third party data (if available and subject to verifying data quality and safeguarding the characteristics of the rated population, including its default rate);
    - combining (if meaningful) asset classes or sub-asset classes with similar risk characteristics in order to perform joint validation assessments; or
    - 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.

29. 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:

    - the use of a ‘relaxed’ default definition for the purposes of validation;
    - combining rating categories; or
    - 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.

30. ESMA typically expects a CRA to produce transition (migration) matrices and analyse 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).

31. 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

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

33. 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.

34. 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.

35. 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.

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

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