

EBA/CP/2023/40

14 December 2023

Consultation Paper

Draft Regulatory Technical Standards amending Delegated Regulation on mapping of derivative transactions to risk categories, on supervisory delta formula for interest rate options and on determination of long or short positions in the Standardised Approach for Counterparty Credit Risk under Article 277(5) and Article 279a(3)(a) of Regulation (EU) No 575/2013 (Capital Requirements Regulation)

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1. Responding to this consultation

The EBA invites comments on all proposals put forward in this paper and in particular on the specific questions summarised in 5.2.

Comments are most helpful if they:

- respond to the question stated;
- indicate the specific point to which a comment relates;
- contain a clear rationale;
- provide evidence to support the views expressed/ rationale proposed; and
- describe any alternative regulatory choices the EBA should consider.

Submission of responses

To submit your comments, click on the 'send your comments' button on the consultation page by 14/03/2024. Please note that comments submitted after this deadline, or submitted via other means may not be processed.

Publication of responses

Please clearly indicate in the consultation form if you wish your comments to be disclosed or to be treated as confidential. A confidential response may be requested from us in accordance with the EBA's rules on public 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 the EBA's Board of Appeal and the European Ombudsman.

Data protection

The protection of individuals with regard to the processing of personal data by the EBA is based on Regulation (EU) 1725/2018 of the European Parliament and of the Council of 23 October 2018. Further information on data protection can be found under the Legal notice section of the EBA website.

2. Executive Summary

The CRR3 includes amendments to the EBA mandate under Article 279a(3)(a), according to which the EBA shall specify, in accordance with international regulatory developments, not only the formula that institutions shall use to calculate the supervisory delta of interest rate options compatible with market conditions in which interest rates may be negative, but also the one for options mapped to the commodity risk categories compatible with market conditions in which commodity prices may be negative. The supervisory volatility suitable for those formulas should be specified as well.

The existing RTS on SA-CCR, which already specify the supervisory delta formula for interest rate options compatible with negative rates, should therefore be expanded to specify the formula that should be used to calculate the supervisory delta of commodity options, compatible with negative commodity prices (and the corresponding supervisory volatility). The legal deadline for the submission of the draft RTS has also been revised and is set 12 months after the entry into force of the CRR3.

The proposed supervisory delta formula suitable for commodity negative prices is as the one set out in Article 279a(1)(a) of the CRR, but it additionally includes a λ shift to the terms P and K to move them into positive territory when they are negative. The value of the λ shift is determined such that a certain threshold on the smallest (i.e. more negative) term between P and K is not crossed. The formula is applied at transaction level. This approach is in line with what the approach for interest rate options set out in the existing RTS.

The existing RTS on SA-CCR is also reviewed to maintain the text fit with the CRR text, as amended by the CRR3.

Next steps

Following the feedback received from the consultation, the EBA will revise the draft amending RTS proposed for consultation, where appropriate, and send them in their final form to the European Commission for adoption.

3. Background and rationale

1. In December 2019, the EBA finalised and published draft Regulatory Technical Standards (RTS) on the Standardised Approach for Counterparty Credit Risk (SA-CCR). The adopted RTS were published in the Official Journal in March 2021¹.
2. Those RTS specify key aspects of the SA-CCR, such as 1) the method for identifying the material risk drivers of derivative transactions on the basis of which the mapping to one or more of the risk categories is to be done; 2) the formula that institutions are to use to calculate the supervisory delta of options, when mapped to the interest rate risk category, which is compatible with negative interest rates; and 3) a method suitable for determining the direction of the position in a material risk driver.
3. The RTS have been developed by the EBA according to Article 277(5) and Article 279a(3) of Regulation (EU) No 575/2013 (CRR), as amended by Regulation (EU) 2019/876 (CRR2). In particular, Article 279a(3)(a) mandates the EBA to specify, in accordance with international regulatory developments, the formula that institutions shall use to calculate the supervisory delta of call and put options mapped to the interest rate risk category compatible with market conditions in which interest rates may be negative as well as the supervisory volatility that is suitable for that formula.
4. The CRR3 proposal includes amendments to the EBA mandate under Article 279a(3)(a). According to the amended legal text of Article 279a(3)(a), the EBA shall specify, in accordance with international regulatory developments, the formula that institutions shall use to calculate the supervisory delta of call and put options mapped to the interest rate risk or commodity risk categories compatible with market conditions in which interest rates or commodity prices may be negative as well as the supervisory volatility that is suitable for those formulas.
5. The existing RTS on SA-CCR should therefore be expanded to specify the formula that should be used to calculate the supervisory delta of commodity options, compatible with negative commodity prices (and the corresponding supervisory volatility). The legal deadline for the submission of the draft RTS has also been revised and is set 12 months after the entry into force of the CRR3.
6. In addition, the existing RTS on SA-CCR should be comprehensively reviewed to ensure that the text is still fit with the CRR text, as amended by the CRR3.

3.1 Supervisory delta formula for commodity risk category

7. The proposed approach for the specification of the supervisory delta formula suitable for commodity negative prices should be as close as possible to the one suitable for negative interest rates, as this latter approach is the result of a consultation process and it represents a methodology already known and used by institutions.

¹ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32021R0931>

8. According to the RTS on SA-CCR (and in line with the Basel standards), the formula that should be used for options mapped to the interest rate risk category is the following:

$$\delta = \text{sign} \cdot N \left(\text{type} \cdot \frac{\ln \left(\frac{P + \lambda}{K + \lambda} \right) + 0.5 \cdot \sigma^2 \cdot T}{\sigma \cdot \sqrt{T}} \right)$$

where

$$\lambda = \max(\text{threshold} - \min(P, K), 0)$$

and

$$\text{threshold} = 0.10\%$$

9. Such a formula is transaction-specific, i.e. it is determined at the level of every single option, and the supervisory volatility to be used is $\sigma = 50\%$ (i.e. the level set out in the Basel standards with no adjustment).
10. The λ shift may be determined as well using the formula applied for negative interest rates, with the only amendment being a change in the threshold level to account for the fact that commodity prices are expressed in Euro, US Dollars or other currencies, i.e.

$$\text{threshold} = \begin{matrix} EUR 0.10 & (\text{option a}) \\ EUR 1 & (\text{option b}) \\ EUR 10 & (\text{option c}) \end{matrix}$$

or the corresponding amount converted at spot exchange rates into the relevant currency

11. As done during the consultation phase, three alternatives are set out to select the adequate threshold level: EUR 0.1, EUR 1 and EUR 10. In addition, the draft RTS should specify that, where P and K are not expressed in Euro, such threshold amount should be converted at spot rates into the relevant currency of the option.
12. For the supervisory volatility to be used, it is proposed to maintain unchanged the levels set out in the CRR2 (which are the ones set out in the Basel standards), i.e. $\sigma = 150\%$ where the underlying instrument is electricity and $\sigma = 70\%$ for other commodities. Also in this case, the proposed approach is the same as the one specified for the interest rate options.

3.2 Other amendments to the existing RTS on SA-CCR

13. Article 4(4) of the RTS on SA-CCR references Article 325a of the CRR in order to identify institutions exempted from the FRTB-SA reporting requirements: “4. Institutions that either meet the conditions set out in Article 94(1) of Regulation (EU) No 575/2013, or are exempted from the reporting requirement in accordance with Article 325a(1) of that Regulation, [...]”.

14. The FRTB-SA will become capital requirements under the CRR3 and Article 325a is amended accordingly. Therefore, the wording of the first subparagraph of Article 4(4) of the RTS should be amended in line with the changes to Article 325a.



4. Draft regulatory technical standards

In between the text of the draft amending RTS that follows, further explanations on specific aspects of the proposed text are occasionally provided, which either offer examples or provide the rationale behind a provision, or set out specific questions for the consultation process. Where this is the case, this explanatory text appears in a framed text box.



COMMISSION DELEGATED REGULATION (EU) .../...

of **XXX**

amending Commission Delegated Regulation (EU) 2021/931 with regard to regulatory technical standards specifying the formula for calculating the supervisory delta of call and put options mapped to the commodity risk category for the purposes of Article 279a(3), point (a), of Regulation (EU) No 575/2013 in the standardised approach for counterparty credit risk

(Text with EEA relevance)

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Regulation (EU) No 575/2013 of 26 June 2013 of the European Parliament and of the Council on prudential requirements for credit institutions and amending Regulation (EU) No 648/2012², and in particular Article 279a(3), third subparagraph, thereof,

Whereas:

- (1) Regulation (EU) 2024/XXX of the European Parliament and of the Council of DD Month YYYY [CRR3]³ amended Article 279a(3), point (a), of Regulation (EU) No 575/2013, to include the case in which the formula to be used for the calculation of the supervisory delta is to be applied to call and put options mapped to the commodity risk category, compatible with market conditions in which commodity prices may be negative, in addition to the formula for supervisory delta of call and put options mapped to the interest rate risk category, compatible with market conditions in which interest rates may be negative, as already specified in Commission Delegated Regulation (EU) 2021/931 of 1 March 2021⁴. Such formula is to be specified in

² OJ L 176, 27.6.2013, p. 1.

³ [COMPLETE REFERENCE HERE]

⁴ Commission Delegated Regulation (EU) 2021/931 of 1 March 2021 supplementing Regulation (EU) No 575/2013 of the European Parliament and of the Council with regard to regulatory technical standards specifying the method for identifying derivative transactions with one or more than one material risk driver for the purposes of Article 277(5), the formula for calculating the supervisory delta of call and put options mapped to the interest rate risk category and the method for determining whether a transaction is a long or short position in the primary risk driver or in the most material risk driver in the given risk category for the purposes of Article 279a(3)(a) and (b) in the standardised approach for counterparty credit risk (OJ L 204, 10.6.2021, p. 7).

accordance with international regulatory developments. According to the Standards published by the Basel Committee on Banking Supervision (BCBS), and in particular the Frequently Asked Questions n. 2 of paragraph CRE52.40, the supervisory delta for options, when the ratio between the underlying and strike prices is zero or negative, such that its natural logarithm cannot be computed, should be determined in accordance with a specific formula, in which a lambda (λ) shift is applied to both the underlying and strike prices of the option, to ensure that the underlying and strike prices of the option are positive.

- (2) In line with the approach set out in Delegated Regulation (EU) 2021/931 for options mapped to the interest rate risk category, the λ shift should be large enough to enable institutions to calculate the supervisory delta of an option mapped to the commodity risk category in accordance with the formula laid down in Article 279a(1) of Regulation (EU) No 575/2013, but at the same time small enough not to introduce unnecessary bias in the outcome of the supervisory delta calculation.
- (3) In line with the approach set out in Delegated Regulation (EU) 2021/931 for options mapped to the interest rate risk category, the value of the supervisory volatility for put and call options in the commodity risk category as determined in the international standards adopted by the BCBS should be used, as it is deemed suitable for its use under Union law.
- (4) Delegated Regulation (EU) 2021/931 should be amended to adapt its text to the new wording of Regulation (EU) No 575/2013, as amended by Regulation (EU) 2024/XXX [CRR3].
- (5) Commission Delegated Regulation (EU) 2021/931 should therefore be amended accordingly.
- (6) This Regulation is based on the draft regulatory technical standards submitted to the Commission by the European Banking Authority.
- (7) The European Banking Authority has conducted open public consultations on the draft regulatory technical standards on which this Regulation is based, analysed the potential related costs and benefits and requested the advice of the Banking Stakeholder Group established in accordance with Article 37 of Regulation (EU) No 1093/2010 of the European Parliament and of the Council⁵,

HAS ADOPTED THIS REGULATION:

Article 1

Commission Delegated Regulation (EU) 2021/931 is amended as follows:

- (1) in Article 4(4), the introductory wording is replaced by the following:

⁵ Regulation (EU) No 1093/2010 of the European Parliament and of the Council of 24 November 2010 establishing a European Supervisory Authority (European Banking Authority), amending Decision No 716/2009/EC and repealing Commission Decision 2009/78/EC (OJ L 331, 15.12.2010, p. 12).

‘Institutions that either meet the conditions set out in Article 94(1) of Regulation (EU) No 575/2013, or meet the conditions set out in Article 325a(1) of that Regulation, may identify the most material risk driver by applying the following steps at inception of the transaction, and then at least on a quarterly basis:’.

(2) Article 5 is amended as follows:

(a) in paragraph 1, the introductory wording is replaced by the following:

‘1. Institutions shall calculate the supervisory delta (δ) of call and put options, when mapped to the interest rate risk or the commodity risk categories, that is compatible with market conditions in which interest rates or commodity prices may be negative, as follows:’;

(b) paragraph 2 is replaced by the following:

‘2. For the purposes of paragraph 1, institutions shall calculate the shift (λ) for any call and put options as follows:

$$\lambda_j = \max\{threshold_j - \min\{P_j, K_j\}, 0\}$$

where:

P_j = the spot or forward price of the underlying instrument of the option j ;

K_j = the strike price of the option j ;

(option a)

$$threshold_j = \begin{cases} 0.10\%, & \text{if option } j \text{ is mapped to the interest rate risk category;} \\ \text{EUR 0.1 or the corresponding amount converted at spot rates into the relevant currency,} & \text{if option } j \text{ is mapped to the commodity risk category.} \end{cases}$$

(option b)

$$threshold_j = \begin{cases} 0.10\%, & \text{if option } j \text{ is mapped to the interest rate risk category;} \\ \text{EUR 1 or the corresponding amount converted at spot rates into the relevant currency,} & \text{if option } j \text{ is mapped to the commodity risk category.} \end{cases}$$

(option c)

$$threshold_j = \begin{cases} 0.10\%, & \text{if option } j \text{ is mapped to the interest rate risk category;} \\ \text{EUR 10 or the corresponding amount converted at spot rates into the relevant currency,} & \text{if option } j \text{ is mapped to the commodity risk category.} \end{cases}$$

Explanatory text for consultation purposes

In order to specify the supervisory delta formula suitable for commodity negative prices, it is proposed to apply a λ shift to the formula set out in Article 279a(1)(a) of the CRR. The value of the λ shift is set such that a certain threshold on the smallest (i.e. more negative) term between

P and K is not crossed. The formula is applied at transaction level (i.e. setting a value of the λ shift specific for each transaction). This approach is in line with what has been done for interest rate options. Different levels for the threshold can be set: EUR 0.1, EUR 1 or EUR 10.

Questions

Q1. Do you agree with the proposed approach for the supervisory delta of commodity options (i.e. to apply a λ shift, determined at transaction level, in both price and strike values)?

Q2. Which one of the three options (option a: EUR 0.1, option b: EUR 1 or option c: EUR 10) do you think is more appropriate as a threshold? Please provide the rationale for the chosen option.

(c) in paragraph 3, the Table is replaced by the following:

Table

Risk category	Underlying instrument	Supervisory volatility
Interest rate	All	50 %
Commodity	Electricity	150%
	Other commodities (excluding electricity)	70%

Explanatory text for consultation purposes

In order to counterbalance the effect produced by the shift λ , a correction on the volatility may be assessed to be needed. However, it could be difficult to find a suitable solution that allows overcoming the possible bias introduced by the λ shift (which is in any case maintained as small as possible). Considering the standardised nature of SA-CCR, it may therefore be more appropriate to maintain unchanged the levels set out in the CRR2 (and in the Basel standards), i.e. $\sigma = 150\%$ for electricity and $\sigma = 70\%$ for other commodities. This approach is in line with what has been done for interest rate options (i.e. maintain unchanged the level set out in the Basel standards, $\sigma = 50\%$).

Question



Q3. Do you agree with the proposed approach for the supervisory volatility (i.e. maintain 150% for electricity and 70% for other commodities)?

Article 2

This Regulation shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Union*.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels,

For the Commission

The President

[For the Commission

On behalf of the President

5. Accompanying documents

5.1 Draft cost-benefit analysis / impact assessment

Article 279a(3)(a) of the CRR3 requires the EBA to develop draft RTS to specify, in accordance with international regulatory developments, the formulas that institutions shall use to calculate the supervisory delta of call and put options mapped to the interest rate risk or commodity risk categories compatible with market conditions in which interest rates or commodity prices may be negative as well as the supervisory volatility that is suitable for those formula.

As per Article 10(1) of Regulation (EU) No 1093/2010 (EBA Regulation), any regulatory technical standards developed by the EBA shall be accompanied by an Impact Assessment (IA), which analyses ‘the potential related costs and benefits’.

This section presents the cost-benefit analysis of the provisions included in the draft amending RTS. The analysis provides an overview of identified problems, the proposed options to address those problems and the costs and benefits of those options. Given the nature and the scope of the draft amending RTS, the IA is high-level and qualitative in nature.

A. Problem identification

In March 2014, the Basel Committee has published its final standard on the standardised approach for measuring counterparty credit risk exposures. The new Standardised Approach for Counterparty Credit Risk (SA-CCR) replaces all non-internal model approaches (i.e. the Current Exposure Method (CEM) and the Standardised Method).

The SA-CCR consists of two components: the replacement cost (RC) and the potential future exposure (PFE). An alpha factor is applied to the sum of these components to calculate the exposure at default (EAD).

As part of the calculation of PFE, banks need to apply a supervisory delta adjustment to the adjusted notional amount at trade-level to reflect the direction of the transaction (i.e. short or long) and its non-linearity. For options, the supervisory delta adjustment is based on the Black-Scholes option pricing model. The Black-Scholes model assumes that the underlying risk factor is positive. In particular, the supervisory delta formula contains the term $\ln(P/K)$, i.e. the natural logarithm of the ratio between the spot or forward price P of the underlying instrument of the option and the strike price K of the option. Given that the natural logarithm is only defined for values greater than zero, a negative P or K (e.g. negative commodity prices) would make the supervisory delta adjustment inoperable.



During the Covid-19 pandemic, some commodity prices went below zero for a certain time. In such cases, the supervisory delta adjustment could not be calculated. CRR3 introduces therefore the possibility to apply to commodity options a different treatment, as it is already the case for interest rate options.

For interest rate options, the EBA has delivered regulatory technical standards (as mandated under the CRR2), specifying the supervisory delta formula for interest rate options compatible with negative rates and the corresponding supervisory volatility suitable for such a formula. Those technical standards have been subsequently adopted by the European Commission and published on the Official Journal.

The CRR3 revision of Article 279a (including the revision of the RTS mandate) requires the EBA to review the already delivered and published RTS. The lack of such revision would result in a misalignment between the CRR3 and RTS.

B. Policy objectives

The specific objective of the draft amending RTS is to establish a harmonised methodology for computing the supervisory delta adjustment applied to options under the SA-CCR when commodity prices are negative. Operationally, this would provide institutions with a practical solution for computing the supervisory delta adjustment in a negative commodity prices environment.

Generally, the RTS aim to create a level playing field, promote convergence of institutions practices and enhance comparability of own funds requirements across the EU. Overall, the RTS are expected to promote the effective and efficient functioning of the EU banking sector.

C. Baseline scenario

In terms of regulatory environment, the baseline scenario assumes the entry into force of the CRR3. It is also expected that institutions are compliant with the key elements included in the existing RTS adopted under CRR2.

D. Options considered, Cost-Benefit Analysis and Preferred Options

This section presents the main policy options discussed during the development of the CP, the costs and benefits of these options, as well as the preferred options included in the CP.

Value of λ shift

Option 1a: Based on the formula $\max(\textit{threshold} - \min(P_j, K_j), 0)$

Option 1b: Based on an alternative methodology (e.g. market convention)



Option 1a provides for a mechanistic way that ensures that the supervisory delta formula will be workable and that the shift is the same across institutions for the same transactions. It is aligned with the guidance provided in the Basel FAQs on SA-CCR and with the methodology for interest rate options already set out in Commission Delegated Regulation (EU) 2021/931. This has the potential to reduce the compliance costs for institutions, which only need to extend to commodity options the already implemented methodology for interest rate options. In contrast, Option 1b would require institutions to apply a new methodology (which may entail the risk that institutions set different values of λ for the same transactions, as it will be the case if the λ shift is determined using market convention), increasing the complexity of implementing the SA-CCR framework. Hence, option 1a is preferred.

Threshold amount

Option 2a: Threshold = EUR 0.1

Option 2b: Threshold = EUR 1

Option 2c: Threshold = EUR 10

Introducing a shift (λ) to the formula for the supervisory delta may lead to different results, depending on the value of the shift⁶. Given that the actual effect depends on many features of the option (e.g. strike price, underlying price, maturity), and similarly to what has been done for determining the threshold level for interest rate options, all three threshold levels are retained for consultation.

Volatility adjustment

Option 3a: No adjustment to volatility

Option 3b: Adjustment to volatility

Despite option 3b could provide a technically more sound solution, option 3a represent a pragmatic approach, reducing the operational burden for institutions and avoiding additional complexity. When consulting on a possible volatility adjustment for interest rate options, the majority of the respondents to the CP did not support the need for any adjustment to the supervisory volatility. It seems therefore natural to follow the same approach also for commodity options, i.e. maintaining unaltered the prescribed values of the supervisory volatility (150% for electricity and 70% for other commodities). Hence, option 3a is retained.

⁶ For a detailed explanation, see the 'Draft cost-benefit analysis/impact assessment' Section of the final draft RTS on mapping of derivative transactions, on supervisory delta formula for interest rate options and on determination of long or short positions under SA-CCR

(https://www.eba.europa.eu/sites/default/documents/files/document_library/Publications/Consultations/2019/CP%20on%20EBA%20launches%20consultation%20on%20technical%20standards/Final%20guidelines/EBA-RTS-2019-02%20%28Final%20draft%20RTS%20on%20SA-CCR%29.pdf).



5.2 Overview of questions for consultation

Q1. Do you agree with the proposed approach for the supervisory delta of commodity options (i.e. to apply a λ shift, determined at transaction level, in both price and strike values)?

Q2. Which one of the three options (option a: EUR 0.1, option b: EUR 1 or option c: EUR 10) do you think is more appropriate as a threshold? Please provide the rationale for the chosen option.

Q3. Do you agree with the proposed approach for the supervisory volatility (i.e. maintain 150% for electricity and 70% for other commodities)?