

# Final Report

Review of the RTS with respect to the procyclicality of CCP margin



## Legislative references

EMIR	European Market Infrastructure Regulation – Regulation (EU) No 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories (OJ L 201, 27.7.2012, p.1-59)
EMIR Delegated Regulation	Commission Delegated Regulation (EU) No 153/2013 of 19 December 2012 supplementing Regulation (EU) 648/2012 of the European Parliament and of the Council with regard to regulatory technical standards for central counterparties (OJ L 52, 23.2.2013, p.41-74)

## Abbreviations

APC	Anti-procyclicality
BCBS	Basel Committee of Banking Supervision
CCP	Central Counterparty
CPMI	Committee on Payments and Market Infrastructures
EBA	European Banking Authority
ECB	European Central Bank
ESCB	European System of Central Banks
ESMA	European Securities and Markets Authority
ESRB	European Systemic Risk Board
FSB	Financial Stability Board
IOSCO	International Organisation of Securities Commissions
RTS	Regulatory Technical Standards on requirements for CCPs in the EMIR Delegated Regulation
SMSG	Securities and Markets Stakeholder Group

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# 1 Executive Summary

## Reasons for publication

The global market turmoil which occurred in March and April 2020 following the emergence of COVID-19 has acted as a live test of the resilience of EU CCPs and the suitability of their regulatory and supervisory framework.

While CCPs have performed overall well throughout the crisis, ESMA's analysis revealed a lack of convergence regarding the implementation of the APC tools across EU CCPs, which can in part be addressed by reviewing and enhancing the RTS defining the APC tools and the modalities of their use.

ESMA published a Consultation Paper on 27 January 2022 with draft targeted changes to the RTS on requirements for CCPs under the Commission Delegated Regulation (EU) No 153/2013 ('the RTS') which ran until 31 March 2022. ESMA also held a public hearing on the Consultation Paper on 17 March 2022. In accordance with Article 41(5) of EMIR, ESMA has consulted the ESCB in finalising this revised RTS and has also sought advice from the EBA and the SMSG.

ESMA conducted further research to ensure that the potential changes to the APC provisions proposed in January 2022 remain valid following the market developments in 2022 due to Russia's invasion of Ukraine, notably in the commodities space, and has made some additional proposals, in order to further enhance the resilience of EU CCPs.

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Section 2 provides some background as to the existing EMIR requirements for CCP APC margin measures and outlines the reasons for a revision of these requirements following the recent market developments. Section 3 sets out the new provisions to further harmonize the policies and procedures for selecting and reviewing the anti-procyclicality margin measures. Section 4 outlines the targeted changes to provide more granularity on the design and the use of specific APC tools under Article 28(1)(a), (b) and (c) of the RTS to promote further convergence and coherence in their application. Annex III contains the full text of the revised RTS relating to the procyclicality of margin.

The proposed targeted revisions focus only on requirements and guidance previously issued by ESMA (i.e. the RTS and the Guidelines on EMIR Anti-procyclicality Margin Measures for Central Counterparties ('the Guidelines')) but do not make new prescriptive proposals in

areas where further work is expected at the international level, in particular regarding margin transparency.

**Next Steps**

ESMA submitted the Final Report on the RTS to the European Commission which now has three months to decide whether to endorse the proposed revised standards under an amending Delegated Regulation. Following the adoption, the RTS is then subject to non-objection by the European Parliament and the Council.

## 2 Background

### 2.1 Existing EMIR requirements

1. The concept of procyclicality refers to the tendency of a financial variable to move with the cycle, which is undesirable where the variable exacerbates financial stress. For instance, margins often behave this way as they tend to rise in times of crisis. It is this tendency of margin requirements to be low during benign times and to increase sharply in times of market stress which is captured in the notion of procyclicality of margin requirements.
2. EMIR acknowledges<sup>1</sup> that margin calls may have procyclical effects and therefore CCPs, their competent authorities, as well as ESMA should adopt measures to limit and control possible procyclical effects in the risk management practices adopted by CCPs, to the extent that a CCP's soundness and financial security is not negatively affected. To this end, Article 41(1) of EMIR requires CCPs to regularly monitor and, if necessary, revise the level of margins to reflect current market conditions, taking into account any procyclical effects of such revisions.
3. Article 41(5) of EMIR sets out the legal mandate for ESMA to develop the related RTS specifying the appropriate percentage and time horizons for the liquidation period and the calculation of historical volatility to be considered for the different classes of financial instruments. It also states that CCPs should take into account the objective to limit procyclicality, and the conditions under which portfolio margining practices referred can be implemented.
4. ESMA required in Article 28(1) of the RTS that a CCP employs at least one of the three anti-procyclicality margin measures:
  - a) apply a margin buffer at least equal to 25% of the calculated margins which it allows to be temporarily exhausted in periods where calculated margin requirements are rising significantly;
  - b) assign at least 25% weight to stressed observations in the lookback period calculated in accordance with Article 26 of the RTS; or
  - c) ensure that its margin requirements are not lower than those that would be calculated using volatility estimated over a 10-year historical lookback period.

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<sup>1</sup> Recital 68 in Regulation (EU) No 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories.

5. The requirements for CCPs developed by ESMA, including the requirements aiming to limit the procyclicality of margin requirements, were enshrined into the EMIR Delegated Regulation.
6. With the aim of clarifying the application of the RTS in the context of procyclicality of CCP margins and ensuring a common, uniform and consistent application of the relevant provisions, ESMA developed a set of Guidelines on EMIR Anti-procyclicality Margin Measures for Central Counterparties<sup>2</sup> ('Guidelines'). The Guidelines were issued separately from the RTS as a follow-up to the 2015 EMIR Review Report No. 2 on the efficiency of margin requirements to limit procyclicality<sup>3</sup> and to the 2016 Peer Review on the Supervisory Activities on CCP's Margin and Collateral Requirements<sup>4</sup>.
7. The Final Report of the Guidelines was published on 28 May 2018 and provided guidance on relevant measures and arrangements to prevent and control possible procyclical effects arising from the risk-management practices adopted by CCPs. The ESMA Guidelines on EMIR anti-procyclicality (APC) margin measures for CCPs are structured into five sections:
  - a) Guideline 1 recommends the regular assessment and review of CCP APC policies based on quantitative metrics;
  - b) Guideline 2 provides guidance on the application of APC measures to at least all material risk factors;
  - c) Guideline 3 focuses on the modalities of the exhaustion and replenishment of the margin buffer under Article 28(1)(a) of the RTS;
  - d) Guideline 4 focuses on the computation of the margin floor under Article 28(1)(c) of the RTS; and
  - e) Guideline 5 provides guidance on the disclosure of APC measures by CCPs.

## 2.2 Recent market developments

8. Since the adoption of the RTS and the Guidelines, the global market turmoil in March and April 2020 following the emergence of COVID-19 has acted as a live test of the resilience of EU CCPs and the adequacy of their regulatory and supervisory framework.
9. EU CCPs performed overall well during the crisis, despite having to operate in a matter of days in a remote business environment. No default procedures were triggered at EU

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<sup>2</sup> [ESMA Final Report](#) ("Guidelines on EMIR Anti-Procyclicality Margin Measures for Central Counterparties"), 28 May 2018

<sup>3</sup> [EMIR Review Report no2](#) ("Review on the efficiency of margining requirements to limit procyclicality"), 13 August 2015

<sup>4</sup> [Peer Review under EMIR Art. 21](#) ("Supervisory activities on CCPs' Margin and Collateral requirements"), 22 December 2016



CCPs during the extreme market movements in March and April 2020 and no waterfall resources needed to be used.

10. However, the surge in initial margin observed has raised questions as to whether some increases (beyond those linked to increased volumes and portfolio changes) may have acted in a procyclical manner, potentially diffusing or even amplifying liquidity stress to other parts of the financial system, and therefore should be mitigated through regulatory or supervisory measures.
11. While differences can, to a certain extent, be explained by the variety of products cleared or APC tools used and their effectiveness under specific market conditions, ESMA found that the implementation of these measures also varies widely across CCPs in the Union.
12. ESMA therefore issued a Consultation Paper from 27 January to 31 March 2022 on draft targeted changes to the RTS which are designed to further harmonize the policies and procedures by CCPs for selecting, assessing and reviewing APC measures, as well as to provide more granularity on the existing tools in the RTS to align their implementation across the EU. ESMA received 12 responses.
13. Since the publication of the consultation in January, the unprovoked and unjustified invasion by Russia of Ukraine has once more tested the resilience of the EU financial system. The price and volatility shocks, due in part to fears of shortages in the energy and other commodities market, have significantly increased margin requirements, creating in turn liquidity strains on certain clearing participants, especially Non-Financial Counterparties (NFCs).
14. In light of these new developments, ESMA decided to conduct additional research to explore if the proposed changes outlined in January were adequate and could have helped to mitigate the effects observed in 2022, notably on commodity derivatives markets. The additional research conducted confirmed the observations made following the COVID-19 stress episode and the need to enhance the existing RTS and guidance.
15. The observed combination of increasing prices and increasing volatility at the same time seems to be a worst-case scenario in terms of margin procyclicality. The impact of this effect on the procyclicality of margins depends on whether a CCP would use relative or absolute measures and margin rates, as applicable. However, it cannot be said if using absolute or relative measures is generally better in terms of stability and conservativeness of margins as it depends inter alia on the asset and the statistical properties of its distribution of returns. According to the revised RTS, the CCP shall consider performing its anti-procyclicality assessment across different price and yields levels for products for which these may significantly vary. Hence, CCPs would be required to consider this in their assessment of the effectiveness of their APC measures.

16. Moreover, a core initial margin model may by itself be excessively reactive. An anti-procyclicality tool would not be able to absorb all extreme big-step margin changes resulting from a procyclical core initial margin model. Moreover, for parametric margin models, the frequency of the margin rate revision may also impact the procyclicality of end margin requirements, as the volatility impact will only be effective when margin rates are revised. According to the revised RTS, a CCP would be expected to assess the procyclical behaviour of its margin model holistically - considering its margin model and the selected APC tool - taking into account as well its risk management practices, such as the frequency of margin rate revision.
17. Concerning the margin buffer as an APC tool, it has been observed that in some cases the price / margin changes can be more extreme than the size of a 25% margin buffer. Hence, the buffer may be eroded early on and may not help to mitigate any further increase. The revised RTS introduces a requirement to consider whether a higher buffer is needed. Moreover, the CCP shall carefully develop and maintain documented procedures setting out the circumstances under which the buffer could be temporarily exhausted or subsequently replenished. While it is acknowledged that it is not possible to have an ex-ante exhaustion strategy that would be optimal under all possible scenarios, a CCP will need to carefully select and justify its relevant procedures, while some discretion is left to the CCP to not follow predefined thresholds and exhaust or reinstate a buffer for cases where the defined strategy would be suboptimal.
18. Finally, during the recent events we have seen that commodities' traders and in general non-financial members have experienced higher pressure as they may not have an easy access to liquidity during stress events. The revised RTS provides that a CCP shall develop and maintain a policy setting the arrangements used to limit the procyclicality of margin requirements setting out the justification behind the choice of a selected APC option, taking into account the CCP's risk management practices, the characteristics of its product offering and its membership structure. A CCP shall also consider the same factors when deciding on the level of the margin buffer.
19. ESMA believes it is therefore necessary and prudent to move forward with the proposed revisions in order to enhance the resilience of EU CCPs and help avoid, when possible, disruptive or big step changes in margin requirements to limit the potential contagion effect to the rest of the financial system.

### **3 General provisions for CCP APC policies**

20. To support further convergence and coherence in the application of the APC measures, ESMA proposed in the first part of the consultation to further harmonise the policies and procedures by CCPs for selecting, assessing and reviewing APC measures against relevant quantitative metrics.
21. To this effect, ESMA proposed to incorporate and to enhance, where necessary, key provisions of the existing Guidelines into the revised RTS, providing them with a stronger legal standing and thereby reducing the risk of divergence in their application.

## 3.1 APC policies and justification of APC tool

### 3.1.1 Background and proposed approach (Consultation Paper)

22. Pursuant to Article 41(1) of EMIR, CCPs are required to regularly monitor, and if necessary, revise margin levels taking into account any potential procyclical effects. Article 28 of the RTS further adds that CCPs should develop procedures to actively identify and manage procyclicality arising from their margin requirements prior to revision.
23. Guideline 1 provides for competent authorities to ensure that CCPs conduct regular assessments of their procyclicality measures with the use of quantitative metrics and to develop policies to review APC measures that would specify: “(a) the risk appetite for procyclicality of its margins e.g., tolerance threshold for big-stepped margin increases; (b) the quantitative metrics it uses to assess the procyclicality of its margins; (c) the frequency at which it conducts the assessment; (d) the potential actions it could take to address the outcomes of metrics; and (e) the governance arrangements surrounding the reporting of the outcomes of the metrics and approval of actions it proposes to take in relation to the outcomes.”
24. In its Consultation Paper, ESMA proposed to improve the overall framework for selecting and reviewing APC measures by introducing the above provision from Guideline 1 into the revised RTS, with certain adjustments.
25. In addition to the above list, ESMA proposed that, for any review of CCP margin policies, the CCP should be able to explain its preference for either APC tool listed under Article 28(1) of the RTS and how it is most suitable for the characteristics of its product offering, its membership and its risk management practices.

### 3.1.2 Summary of Consultation Responses and ESMA’s feedback

26. Split views were expressed with regards to ESMA’s proposal to include such changes into the revised RTS with, on the one hand, broad support by clearing members, clients and public authorities and, on the other hand, concerns expressed by the CCPs and their associations with regards to the prescriptive nature of the requirements.
27. Some CCPs expressed concern that such requirements may limit the flexibility of the CCP to react to given market developments and to adjust margin requirements accordingly. Others expressed a preference for an outcomes-based model focusing on the performance of the CCP from an anti-procyclicality perspective rather than a rules-based approach providing guidance and options as to how this can be achieved.
28. ESMA believes that, as these requirements were already outlined in the ESMA Guidelines, the effort required by CCPs to implement these directly, rather than via the NCA, should be marginal. Instead, ESMA believes that the added clarity on the

decision-making policy and granularity on the content of these procedures is beneficial overall, as the CCP and its users would benefit from a better understanding of the processes used to mitigate the potential procyclical effect of margin changes.

29. Moreover, ESMA finds it had already anticipated the concerns regarding flexibility as it had refrained from proposing specific top-down quantitative targets or hard caps on margin increases (speed limits). As outlined in the consultation, ESMA considers such proposals to be counterproductive and potentially harmful, as these could disincentivize or even prevent CCPs from adjusting margin levels to reflect the current conditions, leading the CCP to become potentially undercollateralised. Almost all respondents agreed with ESMA's preference not to include predefined APC thresholds or 'speed limits' in the RTS, and instead to enable the CCP to deviate from its internal APC targets, if the situation requires so.
30. While ESMA believes that the CCP is best placed to determine internal targets to examine the adequacy of its APC policy based on its own preferences and the market it serves, CCPs should be able to explain and justify their choices, the actions they intend to follow and how they intend to communicate these to their competent authority and to their users. This policy stance has been further clarified in the recitals accompanying the revised RTS.
31. Beyond the more general comments with regards to ESMA's draft proposal on CCP APC policies, ESMA also noted specific concerns in the responses and has tried to address these in the draft RTS.
32. First, ESMA confirms its intention only to require the CCP to explain and justify the suitability of the selected APC tool, and not to conduct a comparison across the three options of APC tools. As outlined in the explanatory section of the Consultation Paper, ESMA believes that requiring the CCP to model and compare the three APC tools when selecting and reviewing its APC measures would prove to be an unnecessary and burdensome process for the CCP. ESMA has made proposals to further clarify this point in the revised RTS.
33. Second, several respondents to the Consultation Paper, as well as certain participants to the public hearing organised by ESMA, also highlighted concerns with regards to the choice of terminology when the draft RTS referred to the "risk appetite" of the CCP for the potential procyclical effects of its margin revisions. ESMA agrees that the choice of wording may create confusion and has therefore revised the RTS to require the CCP to consider its "tolerance for procyclicality".
34. Finally, a recurrent comment in the feedback received by ESMA has been the lack of common understanding of procyclicality of margin behaviour. ESMA has proposed to clarify the concept of procyclicality of margins in a recital of the draft RTS.

## 3.2 Governance and transparency of APC policies

### 3.2.1 Background and proposed approach (Consultation Paper)

35. At the international level, the Basel Committee on Banking Supervision (BCBS), the Bank for International Settlements' Committee on Payments and Market Infrastructures (CPMI) and the International Organization of Securities Commissions (IOSCO) published on 29 September 2022 a report on the review of margin practices<sup>5</sup> calling for additional work in six areas to be carried out in 2023 and beyond, including on the responsiveness of centrally cleared initial margin models to market stresses and to increase transparency in centrally cleared markets.
36. Considering the uncertainty around the outcome of the international work and the fact that the EU already has detailed rules on APC margin measures for CCPs, ESMA had opted for a balanced approach addressing the sometimes divergent implementation of the existing APC tools and policies in the Union to increase the resilience of the EU financial system, without adding new prescriptive rules on EU CCPs which could lead to inconsistent or potentially duplicative requirements should new standards be developed at the international level, in particular in the field of transparency.
37. Following this arbitrage, ESMA had proposed to require the CCP to outline its preferred approach regarding the public disclosure of information on the functioning and the performance of the CCP's choice in APC policies, without defining the standardised disclosure requirements to be followed by the CCP.
38. Therefore, the Consultation Paper did not include detailed provisions on the disclosure of APC measures by CCPs as these are currently under discussion at the international level and could go beyond the requirements currently outlined in Guideline 5.
39. ESMA had also requested feedback from stakeholders on whether the CCP should seek the advice of the risk committee, when setting or reviewing its APC policies. The draft RTS in the Consultation Paper also added that the process defining the preferred "risk appetite", now revised as "the tolerance for procyclicality", would need to be set out in the governance arrangements on APC.

### 3.2.2 Summary of Consultation Responses and ESMA's feedback

40. ESMA notes that the respondents' views were once more divided between the CCP participants and the CCPs themselves. Many clearing members and clients, financial and non-financial, saw value in requiring the CCP to publicly disclose information which would enable the CCP users to monitor and evaluate the performance of a CCP's APC

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<sup>5</sup> <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD714.pdf>

tool. Certain respondents even made proposals regarding what type of information should be disclosed by CCPs.

41. Views by CCPs appeared more nuanced between those preferring a more outcome-based approach to assessing APC policies to those arguing that the public disclosures are already available and include metrics on changes to the margin models.
42. ESMA notes that some public user information is already available to a certain extent as outlined in Guideline 5 and in the CPMI-IOSCO Public Quantitative Disclosure Standards for Central Counterparties. While certain users may consider this information to be insufficiently granular or frequent, ESMA believes it is more appropriate to consider further work on the disclosure requirements and transparency at the international level given the highly comparable effect and impact on CCPs competing globally. This view was also supported by the responding public authorities.
43. In the meantime, ESMA would add that EU CCPs are already required under EMIR Article 38(6) to provide their clearing members with a simulation tool allowing them to determine the amount of additional initial margin, on a gross basis, that the CCP may require upon the clearing of a new transaction. However, ESMA acknowledges that further work may be necessary to harmonise the scope and the type of information covered by margin simulation tools, as well as to increase transparency levels between the clearing member and the client leg (as proposed by the ESRB<sup>6</sup>).
44. Finally, ESMA notes that, since the publication of the consultation, the European Commission has published a new clearing package<sup>7</sup> which would require that clearing members explain to their clients how margin calls work and provide simulations under different scenarios, to help clients better prepare and anticipate future liquidity needs (subject to the outcome of the legislative process).
45. Regarding the question on the mandatory validation by the risk committee, most respondents agreed this would be beneficial. However, certain CCPs pointed out that this would likely already be the case as most CCPs would discuss these questions within the risk committee before receiving their board's approval and would risk duplicating already existing processes. A majority of clients argued instead for a broader consultation beyond the CCP and clearing members to ensure that the views of all clearing participants were considered.
46. While ESMA understands the wish by certain participants to be further involved, ESMA also finds that too broad a consultation without the appropriate knowledge of the CCP and its functioning to be ineffective in receiving the desired input. Nonetheless, ESMA finds that the risk committee would be the right place for such discussions and therefore clarifies that the risk committee would need to be consulted regarding the establishment of APC policies and their review. According to RTS Article 28(5), this

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<sup>6</sup> ESRB, [Liquidity risks arising from margin calls](#), June 2020

<sup>7</sup> [https://finance.ec.europa.eu/publications/capital-markets-union-clearing-insolvency-and-listing-package\\_en](https://finance.ec.europa.eu/publications/capital-markets-union-clearing-insolvency-and-listing-package_en)

means that, if the CCP board decides not to follow the advice of the risk committee, it shall inform the competent authority and the risk committee and explain its decision. The risk committee or any member of the risk committee may also inform the competent authority of any areas in which it considers that the advice of the risk committee has not been followed.

47. Finally, after conducting further research, ESMA agrees that the use and design of APC tools is only one piece of the puzzle regarding margin procyclicality. ESMA has therefore decided to enhance the RTS by requiring the CCP to demonstrate to the competent authority the overall performance of its models to limit the potential procyclical effects of margin revisions, including but not limited to the selected APC tool. The competent authority would then holistically assess the effectiveness of the CCP's margin model and selected APC tool in mitigating the potential procyclicality, and present its findings to ESMA and the college.

### 3.3 Quantitative metrics

#### 3.3.1 Background and proposed approach (Consultation Paper)

48. Guideline 1 recommends that “competent authorities should ensure that any CCP supervised by them defines quantitative metrics to assess the margins, including margin add-ons, in the context of margin procyclicality.”
49. The aim of this Guideline is to ensure that APC policies are benchmarked against specific metrics. This allows for any potential procyclicality arising from significant changes to margin parameters to be identified prior their review. Therefore, ESMA supported the inclusion of a requirement on CCPs to assess the procyclicality of margins based on quantitative metrics defined by the CCP in the revised RTS.
50. The Guidelines also outline two dimensions of metrics for the CCP to consider. CCPs “should holistically assess the long/short-term stability, also compared to the market volatility using indicators, and the conservativeness of margins.”
51. The stability of margin over-time helps measure the effectiveness of APC tools both on a short and long period of time. Guideline 1 also points to the importance of measuring the conservativeness of the margin model, as too low but stable margins over time would not be sufficient to meet the regulatory standards and result in margin breaches.
52. In addition to these two dimensions, ESMA also proposed to include in its Consultation Paper a third dimension for the CCP to consider whether it was requesting
53. especially during stress periods, as this could further exacerbate the liquidity drain for participants at a time when they are already under liquidity pressure.
54. Finally, ESMA had also added that the CCP should consider different price and yield levels for products where these can significantly vary when assessing the effectiveness

of APC measures, as prices changing from very low levels (e.g. close to zero or even negative) up-to very high levels and the use of absolute or relative risk factor returns in the CCP's margin model may substantially impact its behaviour in this respect.

### 3.3.2 Summary of Consultation Responses and ESMA's feedback

55. Overall, most respondents expressed support for the general requirements for quantitative metrics apart from some CCPs which find those too burdensome or overly prescriptive and suggest leaving these aspects to the existing Guidelines or even making them optional.
56. Certain clearing member associations proposed that ESMA goes further and defines detailed metrics, in particular for the stability of margins. One CCP also supported the development of regulatory guidance on the metrics to measure procyclicality and increase comparability, rather than adopting more prescriptive APC requirements. However, due to the ongoing international work and due to the lack of pre-existing EU standards in this field as outlined in Section 3.2, ESMA does not believe that this is an opportune moment to proceed with the development of standardised metrics prior to the finalisation of the international work.
57. Regarding the proposed dimensions, most respondents agreed with the three dimensions, with a preferred focus on stability of margin and their conservativeness to a certain extent. One respondent argued that the long-term stability of margin may not be relevant for assessing APC measures.
58. It is acknowledged that the short-term margin increases over a few days would be more detrimental. However, ESMA believes that the stability of margin over various and sometimes longer time horizons may also be relevant as a significant margin increase over a longer period, even if realised gradually, could also generate pressure to participants. It is also understood that the appropriate time horizon may depend on the characteristics of the products and the asset classes. Hence, ESMA has amended the text of the revised RTS to leave more room to the CCPs to select the appropriate time horizon while at the same time putting a focus on the short-term stability assessment.
59. Some respondents argued that the term chosen for the overcollateralisation dimension which risks creating additional liquidity pressures on clearing participants, referred to as "the potential for margins to be set at an excessive level" in the draft RTS, was inadequate and could be seen as setting an incentive for lower margins. While ESMA agrees this is not an ideal term, ESMA did not receive other proposals to name or define the dimension that ESMA intended to capture and therefore proposes to keep the term as outlined in the consultation.
60. Regarding the assessment across different price and yields, a number of CCPs argued that a requirement to perform the procyclicality assessment across different price/yield levels would be too cumbersome to implement for CCPs, in particular CCPs who clear a broad range of products. However, ESMA finds that the recent developments in



energy and rates markets have shown how such requirements may be particularly relevant in proactively identifying and considering the potential impact from increased price/yield levels. Depending on the CCP's models, the increased prices alone, even without considering the effect from increased volatility of prices, can trigger significant margin calls and a CCP should consider this when designing its APC measures. ESMA believes that the proposed drafting is commensurate as the CCP would be only required to consider performing its APC assessment across different price and yields not for all products cleared but for a given category of products where price and yields levels may vary significantly.

### **3.4 Application of APC margin measures to all material risk factors**

#### **3.4.1 Background and proposed approach (Consultation Paper)**

61. In accordance with Guideline 2, competent authorities should ensure that any CCP supervised by them applies APC margin measures to “at least all material risk factors, which could potentially lead to big-stepped changes in margins, and could include price shifts, foreign exchange shifts, implied volatility shifts, maturity spreads and portfolio margin offsets, as applicable.”
62. ESMA proposed to introduce the guidance for CCPs to apply APC adjustments to all material risk factors, in order to allow the CCP to mitigate procyclical margin increases irrespectively of their source.
63. Guideline 2 also sets out that the CCP may use different APC options for different risk factors or apply the same option across all risk factors by applying the measure independently to each risk factor or by using internally consistent scenarios across risk factors. Moreover, the Guidelines clarify that the APC options may be applied at product or portfolio level.
64. ESMA proposed to introduce this guidance as well in the revised RTS to provide clarity as to how the APC adjustments are to be applied when margining multiple products that are dependent on multiple risk factors.
65. Finally, ESMA also proposed that the CCP also consider the impact that the risk factor change will have on margin, including for products with non-linear dependence on risk factors, such as options.

#### **3.4.2 Summary of Consultation Responses and ESMA's feedback**

66. A majority of respondents agreed with the proposals of ESMA with the usual concerns with regards to the prescriptiveness of the requirements in the RTS.
67. Certain respondents expressed particular concerns regarding the requirement for the CCP to consider all material risk factors. CCPs responding were concerned that

applying APC measures to all material risk factors would be excessive and create a substantial burden on the CCP, without providing valuable additional insights on the procyclicality of margin.

68. While ESMA had proposed in the Consultation Paper to describe ‘material risk factors’ as risk factors which could potentially lead to big-stepped changes in margins, ESMA would point out that the revised RTS purposefully does not propose a set definition of ‘material risk factors’ and leaves this aspect for the CCP to define, depending on its activity and its models. Instead, the revised RTS proposes a list of risk factors which could be considered as material, such as “price shifts, foreign exchange shifts, implied volatility shifts, maturity spreads and portfolio margin offsets” but by no means makes them mandatory. ESMA has therefore clarified in the revised RTS that this requirement would apply to all products, but for each product only to the risk factors deemed material (and not all risk factors), depending on activity and models.
69. While most respondents supported enabling different APC measures for different risk factors, one respondent expressed concerns that this could imply that the justification requirement under Article 28a(1)(a) of the revised RTS would be determined at the risk factor level, while other respondents supported this interpretation. To avoid making the APC requirements too burdensome, ESMA confirms that the justification can be provided for a group of products or risk factors sharing the same APC measure and common characteristics in terms of potential procyclical behaviour, rather than an individual justification per risk factor, and has clarified this in the revised RTS.

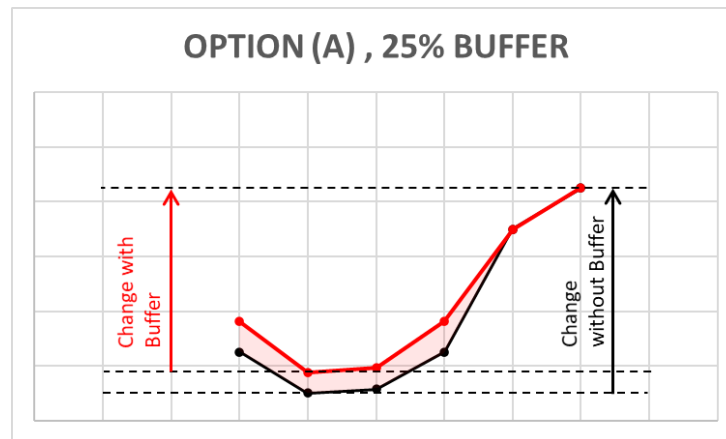
## **4 Provisions on specific APC tools**

70. ESMA proposed in the second part of the consultation to amend the RTS to improve the efficiency of APC margin measures by providing further granularity on the design and the use of specific tools.

### **4.1 Margin buffer under Article 28(1)(a) of the RTS**

#### **4.1.1 Background and proposed approach (Consultation Paper)**

71. The APC option under Article 28(1)(a) (“25% Buffer”) of the RTS is one of the most widely used options by CCPs and is also used in many cases as a fall-back option for products with a limited available history. The margin is scaled up by at least 25% during periods of low volatility. When volatility increases, the CCP will need to temporarily exhaust the buffer in order to mitigate the need for a sharp increase.



**FIGURE 1: APC OPTION (A), "25% BUFFER"**

72. Guideline 3 provides further guidance on the use of the RTS Article 28(1)(a) 25% margin buffer. It notably recommends that CCPs which have chosen this tool develop and maintain documented policies and procedures setting out the circumstances under which the buffer could be temporarily exhausted. It further adds that these "policies and procedures should specify at least: (a) the metrics and thresholds for which the CCP believes that margin requirements are rising significantly, and which may warrant the exhaustion of the margin buffer; (b) the conditions for replenishment of the margin buffer following its exhaustion; and (c) the governance arrangements surrounding the approvals for the exhaustion and replenishment of the margin buffer."
73. In its initial analysis, ESMA had explored what would be the cost and benefit of adopting more prescriptive regulatory requirements setting exactly when and how the CCP should exhaust the buffer. The analysis confirmed that the effectiveness of this APC option strongly depends on how efficiently and timely the CCP exhausts the buffer. As ESMA found that there is no evidence of the existence of a buffer exhaustion strategy which would be optimal for all products, market events and stress scenarios, ESMA considered it inappropriate to set prescriptive regulatory requirements on the timing and way to exhaust/replenish the margin buffer.
74. Instead, ESMA proposed to introduce in Article 28(1)(a) of the revised RTS a similar requirement to the existing Guideline 3 which would require that the CCP develop and have documented policies and procedures setting key elements of the use of this APC option. These should include the metrics that will be used to assess when margin is increasing, the thresholds to determine when this increase would be deemed as significant and would warrant the exhaustion of the buffer, the conditions for its replenishment and the relevant governance arrangements.
75. Another key aspect of the margin buffer is its sizing which constitutes a complex trade-off for the CCP between its impact on margin stability, conservativeness, and the potential for the buffer to lead to overcollateralisation and to excessive costs, which can also drain liquidity especially during stress conditions.

76. In its analysis, ESMA had simulated the performance of different buffer levels for multiple simple directional portfolios across asset classes in order to assess whether the revised RTS should set the buffer at a higher/lower level or even differentiate it per asset class.
77. Having in mind that the simulation selected the best exhaustion strategy on an ex-post basis, the results confirmed that an increased size of the buffer would improve the conservativeness (smaller margin shortfalls) and also increase the average (and peak) margin. However, ESMA found that the marginal benefit started to deteriorate when the buffer is set at very high levels. Moreover, if the buffer is not exhausted when needed, this tool would exacerbate margin changes and further fuel procyclicality. This effect would be even stronger for an increased buffer.
78. ESMA had also considered whether different levels of buffers for different asset classes would be needed to achieve the same stability of outcome and found that this would strongly depend on the choice of specific assets within asset classes and their performance in recent history. Based on its analysis, ESMA found the current level of the margin buffer which is set at “at least 25% of the calculated margins” to be adequate and hence does not suggest increasing the minimum required size of the buffer.
79. However, ESMA noted that it would be useful to further clarify that the 25% of margin requirement should be read as a minimum and that the CCP should assess whether a higher level of buffer would be needed considering its own products and margin model. ESMA therefore proposed that the CCP should justify its initial choice of the size of the buffer and regularly check its appropriateness.

#### 4.1.2 Summary of Consultation Responses and ESMA’s feedback

80. Respondents expressed overall broad support for the need to develop policies and procedures setting the use of the margin buffer and its replenishment.
81. Most respondents agreed on the need to have a plan for the exhaustion and replenishment of the buffer and that this plan should allow for some discretion for the CCPs. However, views diverged regarding the exact level of discretion available to the CCP, with CCPs asking for more flexibility, while clearing participants favoured limiting this discretion and instead requested additional transparency on the conditions for deviating from the initial plan, while recognising that it is very difficult to predict the optimum exhaustion strategy of the buffer. Finally, responding authorities and one CCP also expressed preference for additional guidance on how to set the parameters to determine when the exhaustion of the margin buffer may be warranted, and under which conditions the buffer should be replenished following an exhaustion.
82. In light of the answers provided, ESMA finds that the draft revised RTS proposes the right balance between the imperatives of preparedness and the necessary flexibility for the CCP to determine the modalities of use of this tool. While CCPs would be required to set predefined thresholds as part of their policy, ESMA believes it is more appropriate

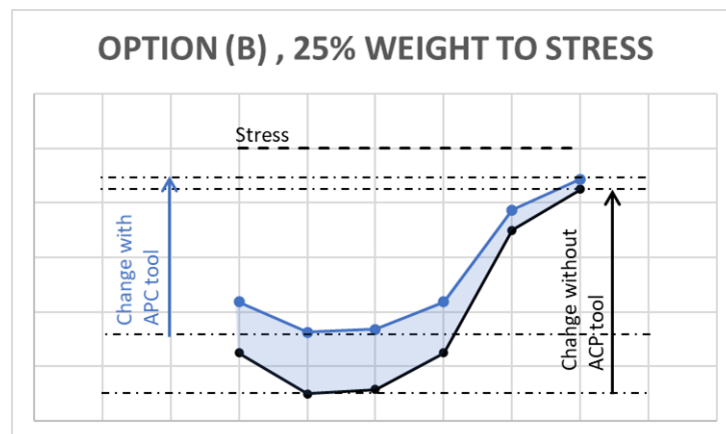
to leave a certain degree of discretion to the CCP to determine the right timing and use of the margin buffer, as binding the CCP into a potential misuse of the margin buffer may reduce the effectiveness of the tool or even exacerbate the procyclical effect of the margin increase. Hence, ESMA would keep the initial proposals guaranteeing that the CCP is provided with the flexibility to not follow the predefined thresholds, if deemed necessary, as long as this is subject to appropriate governance arrangements set in the CCP's APC policy.

83. Regarding the sizing of the margin buffer and the requirement on CCPs to assess whether a 25% buffer or more is suitable, views were once more split between the clearing participants and the CCPs. A number of clearing participants questioned whether the 25% margin buffer was adequate given recent market developments, while CCPs expressed concerns that the requirement to justify the level of the margin buffer and to regularly review the size of the buffer would be too burdensome on the CCP.
84. As outlined in the ESMA's research, while ESMA agrees that a 25% margin buffer may not prove to be sufficient for all products in all circumstances (argument used by both sides to either increase the minimum requirement or remove it altogether), ESMA prefers to keep in the revised RTS the clarification that the 25% figure is a regulatory minimum, requiring the CCP to assess if the margin buffer needs to be set at a higher level. ESMA considers it essential that the CCP be able to explain why the chosen size of the buffer is suitable.
85. With regard to what the CCP has to take into account for this purpose, ESMA has updated the draft revised RTS to refer to its risk management practices, the characteristics of its product offering and its membership structure, in order to streamline the relevant provisions with Article 28a(1)(a) in the revised RTS setting what has to be considered when selecting the appropriate APC tool. Considering also the recent market events and the liquidity pressure experienced by Non-Financial Counterparties (NFCs), ESMA finds it important to include, in addition to the products and models, the membership structure.
86. However, a CCP association was concerned that the initial drafting proposed by ESMA could be read as a requirement for justification only on CCPs with margin buffers higher than the regulatory minimum. ESMA has therefore clarified in the revised RTS that the justification of the level of the margin buffer would be needed in all cases.
87. Finally, ESMA acknowledges that one of the weaknesses of this tool is that it could allow the buffer, even when in effect, to be very small as the relative (%) buffer may be small when the margin is low. Hence, ESMA has updated the draft revised RTS to require that CCPs using this tool also consider introducing a floor on the margin to avoid that the buffer becomes too low when in effect. It is clarified that there is no requirement to have a floor in all cases or on how the CCP would need to calibrate this floor. The CCP would need to consider introducing a floor when deciding on the calibration of this tool, considering its risk management practices and the characteristics of its product offering.

## 4.2 25 % weight to stressed observations under Article 28(1)(b) of the RTS

### 4.2.1 Background and proposed approach (Consultation Paper)

88. According to current requirements in Article 28(1)(b) of the RTS, the CCP shall assign at least 25% weight to stressed observations in the lookback period calculated in accordance with Article 26 of the RTS. Under this option, the regulation seeks to introduce protection against procyclical effects by assigning a minimum weight to stressed observations. The incorporation of stressed observations aims to allow for a smoother transition from a ‘low volatility’ to a ‘high volatility’ environment, by reducing the magnitude of the required margin calls.



**FIGURE 2: APC OPTION (B), “25% WEIGHT TO STRESS”**

89. However, ESMA notes that the Guidelines did not provide guidance on how to apply the APC tool under Article 28(1)(b) of the RTS, contrary to the APC tools under Article 28(1)(a) and (c) of the RTS. The current RTS and Guidelines do not indicate the expected length of the time horizon (lookback) within which one needs to look for stressed observations. The reference to Article 26 of the RTS does not provide any relevant insight as this Article discusses the time horizon for the liquidation period (i.e. minimum of 2 or 5 days) and not the lookback period for the identification of observations or the calculation of historical volatility. Moreover, there is no explicit definition of what would qualify an observation as stressed for the purpose of this tool, as there is no specific reference to the extreme and plausible market scenarios identified under Article 30 of the RTS for the purpose of the CCP’s stress testing framework. Finally, there is no indication as to how the CCP is expected to assign the 25% weight to the stressed observations in its margin calculation.

90. Based on its analysis, ESMA proposed in the Consultation Paper to introduce further granularity for the implementation of this APC tool under a revised Article 28(1)(b) of

the RTS to clarify (i) how to identify stressed observations, (ii) how to calculate a stress margin using these observations and, finally, (iii) how to integrate the stress margin in the final margin amount.

#### 4.2.1.1 Identification of stress scenarios

91. For the identification of stress scenarios, ESMA proposed in the Consultation Paper to refer to Article 30(2)(a) of the RTS which requires the CCP to specify a range of historical scenarios, including periods of extreme market movements observed over the past 30 years, or as long as reliable data have been available, that would have exposed the CCP to the greatest financial risks. This provision ensures that the set of extreme market movements defined for the purpose of the APC tool will indeed include the most relevant extreme market movements for all products cleared. It also provides clarity on the length of the lookback period used for the same purpose in a way that is consistent and adds no further ambiguity or operational burden in the identification of the relevant observations. This provision also caters for cases where the CCP has restricted reliable data or where the CCP does not deem that the recurrence of a historical instance of large price movements to be plausible and therefore should be included based on existing procedures.
92. ESMA also proposed that the CCP consider including potential future scenarios as identified under Article 30(2)(b) of the RTS. This provision is particularly relevant for products which have only a limited set of historical scenarios such as newly cleared products, e.g. power contracts, or to model events that are plausible but very infrequent in nature, such as the de-pegging of a currency or the breakdown of historically stable correlation across market and financial instruments. The fact that such events will be accounted for in the set of extreme market movements used for the APC tool, means that the APC tool may be better prepared to provide an adequate buffer to mitigate big-step changes if such events would realise.
93. In its Consultation Paper, ESMA acknowledged that including extreme market movements implied by hypothetical stress scenarios in the margin calculation may not always be straightforward. From an implementation point of view, potential future scenarios would need to be translated into market movements for cleared products in order to be included in the set of extreme market movements, which may be easier for cases where the scenarios result from statistical modelling of prices but may be more challenging for more qualitative assessments of potential market conditions.
94. Including movements implied by hypothetical scenarios can be beneficial especially where there are events that are plausible but cannot be found in the history. However, the usefulness of including such scenarios will depend on the properties of the cleared products and the severity of the hypothetical scenarios if compared to the severity of the historical scenarios. Therefore, ESMA had proposed in the Consultation Paper that the CCP 'consider' including hypothetical stress scenarios, without making it mandatory, to cater for the above situations.

95. Another residual risk identified by ESMA regarding the identification of stress scenarios would be the absence of a sufficient amount of stress observations to make sure that the 'stress' margin is adequately higher than the unadjusted margin. While ESMA had considered in its analysis to set a restriction on the number of stress observations to be included in the stress margin, ESMA found it would be difficult to define a hard threshold considering that such requirements would be imposed to CCPs having very diverse sets of margined products, models and calibrations. Therefore, ESMA proposed in the consultation that the CCPs retain the flexibility to select this set of extreme observations, while requiring them to ensure they had selected an adequate number of severe observations for all margined products, including the ones that could expose the CCP to the greatest financial risks.
96. Finally, ESMA also noted that the requirement to consider Article 30 of the RTS historical scenarios could, as a side effect, increase procyclical margin changes when these stress scenarios are more severe than what was experienced in the past and immediately added to the stress margin. Therefore, ESMA had considered to exclude the most recent stress observations (e.g. last 30 days) to avoid a spike in the 'stress' margin during a stress period that would not allow the automatic exhaustion of the buffer. However, ESMA found it difficult to identify an optimum length for the period before historical scenarios should be included. Moreover, introducing a specific period could lead to cliff edge effects since a CCP (or even multiple CCPs) would be required to suddenly (and simultaneously in case of multiple CCPs) include the recent stress observation even if the stress period has not ended. Therefore, ESMA decided not to include in the revised draft RTS text any specific restrictions on when the CCP should include new stress observations, and instead, added a provision requiring the CCP to consider reviewing the set of extreme market movements more frequently than annually, taking into account the procyclical effects from such revision.

#### 4.2.1.2 Methodology to calculate a stress margin using the stress observations

97. The aim of the calculation of stress margin is to estimate what the margin could look like in times of stress. For this reason, ESMA proposed in the Consultation Paper that the calculation of the stress margin uses stress observations and consider the same model and remaining parameters (i.e. including confidence level under Article 24 of the RTS, liquidation horizon under Article 26 of the RTS and portfolio margining and Article 27 of the RTS) used for the unadjusted margin calculation, except for the time horizon under Article 25 of the RTS that is to be replaced by the set of extreme market movements. This would mean that the extreme market movements identified for the stress testing framework would be generally more severe than what should be used for margin calculation.
98. However, ESMA clarified in the Consultation Paper that the rules should not be interpreted to mean that the CCP may somehow scale down the stress margin amount calculated using the stress observations or in any other way target a hypothetical confidence level of 99% or 99.5% for another lookback period. This practice would not meet the requirements and ensure that the stress margin amount would proxy a margin



amount during a stress period. Therefore, ESMA had added a provision restricting this practice in the draft RTS.

#### 4.2.1.3 Integration of the stress margin in the final margin amount

99. The final margin amount using this APC tool would be equal to 75% of the unadjusted margin, i.e. the margin before any anti-procyclical adjustment, and 25% of the stress margin calculated during the previous step. What is driving the effectiveness of this tool is that the stressed observations help to build a buffer during benign volatility periods, which is then eroded as volatility approaches stress levels. In this case, the implied buffer is, at any time, equal to 25% of the difference between the stress margin and the unadjusted margin. As the unadjusted margin approaches the stress margin, this implied buffer gets gradually and automatically eroded.
100. However, as unadjusted margin immediately includes new stress observations (while this is not the case for stress margin), this could lead to cases where the unadjusted margin is higher than the stress margin. To avoid such situations, ESMA proposed to clarify in the Consultation Paper that, where the 'stress' margin is lower than the unadjusted margin, the final margin amount should be equal to the unadjusted margin to avoid situations where the CCP could be undercollateralised.
101. In the Consultation Paper, ESMA noted that a drawback of the existing APC tool under Article 28(1)(b) of the RTS is that the CCP cannot decide to fully exhaust the buffer at once if the rate of increase of the margin requirement is very high, as the buffer will only be automatically fully exhausted when the margin reaches its stress level. ESMA therefore added a provision in the revised draft RTS to allow the CCP to temporarily reduce or even exhaust the implied buffer (weight to stress) when margins are rising significantly. This is meant to allow the CCP to alleviate the effects from rapid and sharp margin increases which however would not bring margin to their stress level and therefore not lead to an automatic exhaustion of the buffer.
102. While ESMA had considered adding a provision defining a specific length for the period after which the CCP would have to revert to the normal weighting, ESMA found it difficult to identify an optimal duration as this could have negative effects if the stress episode were still ongoing. Instead, ESMA proposed that the CCP should have predefined thresholds for its temporary 'weight-reduction strategy', as well as the discretion not to follow these thresholds if deemed necessary. ESMA also added that the CCP should have a documented policy setting out the circumstances under which the weight could be temporarily reduced, including metrics and thresholds to determine when margin is rising significantly, the conditions for replenishment and the related governance arrangements.

## 4.2.2 Summary of Consultation Responses and ESMA's feedback

### 4.2.2.1 Identification of stress scenarios

103. Most clearing members, clients and authorities generally agreed with ESMA's proposal to include extreme historical stress scenarios in the stress margin, while most CCPs believed the requirement to be too restrictive and too conservative on overall margin levels. Certain CCPs stated it would be inappropriate to include extreme historical stress scenarios in the calculation of stress margin as this would imply that the 'tail risk' would already be covered by the initial margin, rather than to size the default fund, and that this could disrupt the current balance of incentives within the CCP between the individual and mutualized resources. For these reasons, several CCPs requested that this requirement be for the CCP's consideration rather than an obligation. Nonetheless, most respondents agreed that it made sense to consider at least certain historical scenarios to calculate stress margin.
104. Furthermore, the broad majority of respondents agreed with ESMA's proposal for CCPs to consider including hypothetical stress scenarios. While most CCPs responding welcomed the discretion for the CCP to choose the hypothetical stress scenarios and how to incorporate them in the stress margin, certain CCPs considered that the obligation to 'consider' including them to be already too burdensome.
105. ESMA has decided to update the draft proposals leaving more room for the CCPs to define the past moves and historical stress scenarios that would need to be added. The CCPs would still need to include past moves from highly volatile periods and when doing that consider the historical scenarios identified under Article 30(2)(a) of the RTS. The objective of this provision is not to increase the margin levels in all cases but to allow the CCP to adequately estimate what margin could look like in times of stress and ensure the existence of an effective APC tool. This is expected to be met by the careful calibration of this tool in order to meet this objective. ESMA has also kept the proposed draft requiring the CCP to consider also including potential future scenarios identified under Article 30(2)(b) of the RTS.
106. ESMA's proposal to require the CCP to include an adequate number of extreme market movements for different products received overall limited feedback from clearing participants, though those who replied agreed with ESMA's proposal. However, CCPs responding were against this requirement being applied to all margined products, arguing that this would add significant burden onto CCPs, especially for CCPs clearing multiple products, also pointing to the fact that CCP margin requirements are generally applied on a portfolio-level basis, as opposed to product-by-product. Certain CCPs also flagged that this may risk diluting the most relevant scenarios as the CCP would be required to identify at least a stress scenario for each individual product. Based on the feedback received, ESMA has clarified that the scope of this requirement is limited to margined products which may expose the CCP to the greatest financial risk (and not all margined products).

107. Finally, most respondents agreed with ESMA's proposal not to include a specific time horizon for including recent stress events in the stress margin models to avoid increasing margin during a stress period. However, most CCPs disagreed with the proposal that this should be balanced with a requirement to consider whether a more frequent review than the mandated annual one would be appropriate, given the additional burden this could add on the CCP. Certain CCPs proposed to align the review process with the one included in Article 31 of the RTS which introduces the possibility for more frequent revisions "when market developments or material changes to the set of contracts cleared by the CCP affect the assumptions underlying the scenarios and so require an adjustment to the scenarios." The draft revised RTS has been updated to reflect a similar provision, while making clear that the CCP should also take into account the procyclical effects from such revision.

#### 4.2.2.2 Methodology to calculate a stress margin using the stress observations

108. Most clearing participants agreed with ESMA's proposal requiring CCPs to use the same model and parameters for stress margin as for the unadjusted margin, except for the liquidation period which should be replaced by the set of extreme market movements. However, a number of CCPs disagreed with ESMA's proposal arguing that this would result in overall margin requirements (ordinary margin elements plus APC tools) exceeding the confidence level set out in Article 41 of EMIR throughout the economic cycle. Others argued that applying the same model and parameters for the stress margin as for the unadjusted margin could lead to unstable models, as it would be applied to a much more restricted number of scenarios.

109. While ESMA takes due note of the concerns expressed, ESMA would reiterate that it is the very aim of the stress margin to be higher and more conservative than the unadjusted margin under Article 41 of EMIR to be able to dampen the effect of big-step margin changes. Moreover, the set of extreme market movements is not meant to comprise only RTS Article 30(2)(a) historical stress scenarios but past observations from highly volatile period. CCPs applying this tool would be required to ensure that the set of extreme market movements includes an adequate number of extreme market movements. ESMA has therefore kept the relevant provisions in the revised RTS as proposed in the Consultation Paper.

110. ESMA had also proposed that the CCPs should recompute the stress margin at least on a daily basis and avoid using scaling techniques that can affect the severity of observations or the calculated stress margin. While most respondents agreed with the requirement for a daily computation of margin parameters, a majority of CCPs were against removing the possibility to use scaling techniques.

111. Certain respondents highlighted that scaling is used in different contexts. Some CCPs argued that scaling in volatility filtering should be allowed to avoid flooring margin at historically high levels and allow it to recognize prevailing market conditions, while other CCPs argued that scaling is sometimes performed at the point of defining a stress scenario.

112. ESMA disagrees with the possibility to use scaling techniques when modelling stress margin as this risks defeating the purpose of the APC tool. Moreover, for the avoidance of doubt, if the CCP already adjusts some past stress observations when defining the RTS Article 30(2)(a) historical stress scenarios as these were considered as not plausible according to the procedure set out in the same Article, the CCP would still be allowed to use these adjusted stress observations for the APC tool as these are part of its suite of available historical stress scenarios. ESMA has therefore not found necessary to review the revised RTS to that effect.

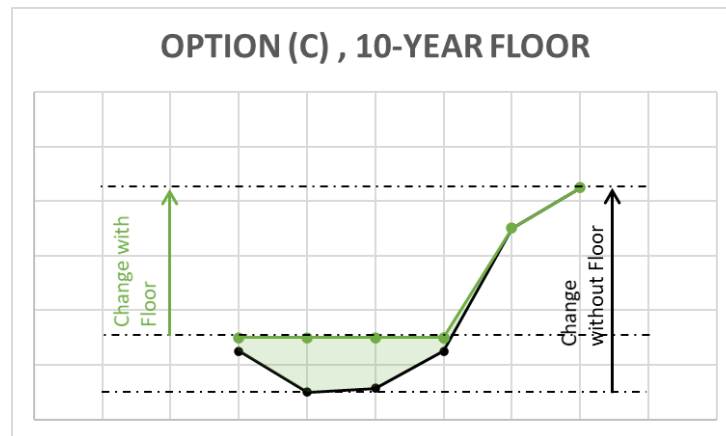
#### 4.2.2.3 Integration of the stress margin in the final margin amount

113. The majority of respondents agreed with ESMA's proposal to allow CCPs to temporarily increase the weight that is applied to the unadjusted margin and equally reduce the weight applied to stress margin. Most respondents also agreed with the provision whereby the CCP should have some discretion, subject to appropriate governance, to determine the right timing and period of time for adjusting weights. Only one clearing member association expressed scepticism towards allowing the CCP to temporarily increase the weight that is applied to the unadjusted margin, arguing this could have downside effects if the CCP misjudged the overall volatility spike. ESMA would therefore keep the proposed provisions allowing for a temporary reduction of the weighting of the stress margin in the revised RTS.
114. One public authority also suggested that ESMA clarify in the revised RTS that the 25% weight is indeed a regulatory minimum and could be set at higher levels by the CCP. ESMA agrees that this was the intent of the proposal and has therefore modified the revised RTS accordingly specifying that the CCP should apply at least a 25% weight. The text was further revised to clarify that the two weights, i.e. on the stress margin and on the unadjusted margin, should always add to 100%.
115. One CCP association responding enquired whether an implementation period will be allowed by ESMA, arguing that the number of changes suggested in the draft revised RTS would trigger several governance procedures such as model validation under Article 49 of EMIR and approval of risk committees. ESMA acknowledges that this may lead to significant changes to the risk models and parameters of certain CCPs triggering a validation process by the competent authority and ESMA and therefore would propose an implementation period of 12 months.

### 4.3 Margin floor under Article 28(1)(c) of the RTS

116. The APC option under Article 28(1)(c) ("margin floor") of the RTS introduces a floor aiming to prevent the margin from falling too low during lower volatility periods. The floor is set by ensuring that margin requirements are not lower than those that would be calculated using volatility estimated over a 10-year historical lookback period.
117. This tool is designed to address procyclical effects that could arise following a rapid increase of volatility from below the floor. The margin increase will start from a

higher level (as defined by the floor) reducing the magnitude of the needed margin increase.



**FIGURE 3: APC OPTION (C), “MARGIN FLOOR”**

#### 4.3.1 Background and proposed approach (Consultation Paper)

118. A potential weakness of this APC option is that it will not provide any anti-procyclical protection as soon as the margin is above the defined floor. Unless stress periods are adequately reflected in the lookback, the use of a long lookback will typically result in a floor which is too low to be effective as it will tend to reflect the long-term mean volatility. ESMA had therefore proposed in its Consultation Paper to review the long lookback period used for the calculation of the margin floor to include stress periods, in order for the margin floor to remain effective in mitigating procyclicality over time.

119. The inclusion of relevant stress observations can be ensured by either further extending the lookback period to make sure that it includes stress observations or by appending stress observations to the 10-year lookback. ESMA had explored in its initial analysis the effectiveness of both measures.

120. While extending the lookback period to periods beyond 10 years increases the probability that all relevant stress events will be included (e.g. 2008 financial crisis), it also carries the risk that such events be diluted among a greater number of less relevant events. As expected, the proposals to enhance the floor calibrations with additional stress scenarios resulted to higher margins compared to the “10-year floor” model. Hence, ESMA proposed in the Consultation Paper to keep the current 10-year lookback period and to require the CCPs to append additional stress observations beyond those that may already be included in the 10-year lookback period.

121. ESMA also proposed to align the methodology to identify stress scenario with the existing procedure outlined in Article 30 of the RTS. As for APC tool under Article

28(1)(b) of the revised RTS in the Consultation Paper, ESMA proposed to leave a degree of flexibility to the CCP to select the observations, while requiring the CCP to ensure that the set of extreme market movements includes an adequate number of scenarios for all margined products, including the ones that could expose it to the greatest financial risk.

122. In order to ensure the effectiveness of the floor, ESMA also proposed to introduce into the draft revised RTS certain recommendations already included in Guideline 4 according to which the margin floor should be computed in a manner that continues to meet the requirements set out in EMIR and the RTS, including compliance with Articles 24 on margin percentage, 26 on time horizons for the liquidation period and 27 on portfolio margin of the RTS.

123. However, ESMA proposed not to include in the draft revised RTS the derogation that is included in Guideline 4 allowing the CCP to calculate the floor less frequently if it can demonstrate that it will remain stable over an extended period of time. Instead, ESMA included in the draft revised RTS a requirement for the CCP to recalibrate and recompute it at the same frequency that it recalibrates and recomputes its margin requirements.

124. ESMA also proposed to include in the draft revised RTS the provision in Guideline 4 which recommends avoiding using modelling procedures or 'scaling techniques' to reduce the effectiveness of using a 10-year historical lookback period for the computation of the margin floor.

125. Finally, ESMA added language clarifying that the "10-year plus stress" margin should be considered as the floor and not the baseline margin model.

#### 4.3.2 Summary of Consultation Responses and ESMA's feedback

126. Most respondents agreed with the objective of ESMA's proposal to ensure the inclusion of some stress observations in the 10-year look-back period. However, most CCPs believe that the decision to include stress periods should be at the discretion of the CCP depending on whether or not the stress scenarios are already included in the 10-year look-back period. CCPs further noted that, for some asset classes, there are enough extreme scenarios in the last 10-year period and that adding stress events to the lookback for the calculation of the margin floor would potentially be redundant. The respondents therefore proposed to make the inclusion of stress scenarios optional.

127. As outlined in the Consultation Paper, volatility tends to be mean-reverting as it typically oscillates around a long-term mean. So, unless stress periods are adequately reflected in the lookback, the use of a long lookback will typically result in a floor that reflects the long-term mean volatility, which is insufficient to act as an effective margin floor to mitigate pro-cyclicality. Therefore, ESMA would keep the provisions in the revised RTS requiring that the long lookback period used for the calculation of the margin floor be completed by additional stress periods. However, the draft RTS has

been updated to clarify that the CCP would not have to add a set of additional extreme market movements, if the 10 years already include a set of extreme market movements according to the revised RTS requirements.

128. The majority of respondents agreed with ESMA's proposal to use the same model and parameters for the calculation of the floor as a way to ensure consistency across common concepts already adopted into existing regulation.
129. Most respondents also agreed with ESMA's proposal with regards the recalibration and recomputation of the margin floor. However, some clearing participants and CCPs noted that they did not believe that a daily recalibration was desirable as this could affect the stability of the floor parameterisation, while certain CCPs considered it may be too costly and burdensome for CCPs and participants to compute the "10-year + stress" floor on a daily basis, especially for CCP performing margin analysis very frequently (e.g., at/near real time, hourly).
130. ESMA believes that the frequency of the recalibration and recomputation of the APC tool under Article 28(1)(c) of the RTS should depend on the type of model chosen by the CCP. For example, where a CCP uses a parametric margin model (e.g. SPAN) where the margin is calculated daily but the parameters reflecting the prevailing level of volatility are recalibrated on a monthly basis, the CCP shall apply the same practice for the floor, i.e. the floor shall be calculated daily and the parameters reflecting the prevailing level of volatility on the floor shall be recalibrated monthly. As a further example, where the CCP uses a historical VaR model where the margin is calculated daily reflecting also on a daily basis the prevailing level of volatility, the CCP shall apply the same practice for the floor, i.e. the floor shall be calculated daily reflecting also on a daily basis the prevailing level of volatility. Moreover, the floor should be relatively stable but should also not stay constant over a prolonged period. It should slowly adapt to a new volatility regime in order to avoid a future sharp increase. Finally, it should not be too difficult or costly to calculate a 10-year margin daily as CCPs already do that.
131. The restriction of the use of scaling techniques gathered the most opposition from CCPs, while other clearing participants appeared supportive. Some CCPs further specified that they do not agree with not allowing a 10-year filtered model to be enough to comply.
132. However, modelling procedures such as applying different weights to reduce the effectiveness are already to be avoided according to existing Guidelines. ESMA would therefore follow the same approach as for APC tool under Article 28(1)(b) of the RTS which prevents the use of scaling techniques for the modeling of the APC tool.

## 5 Annexes

### 5.1 Annex I

#### Legislative mandate to develop technical standards

##### **Article 41 of EMIR**

5. In order to ensure consistent application of this Article, ESMA shall, after consulting EBA and the ESCB, develop draft regulatory technical standards specifying the appropriate percentage and time horizons for the liquidation period and the calculation of historical volatility, as referred to in paragraph 1, to be considered for the different classes of financial instruments, taking into account the objective to limit procyclicality, and the conditions under which portfolio margining practices referred to in paragraph 4 can be implemented.



## 5.2 Annex II

### Cost-benefit analysis

#### 1. Introduction

Article 41(5) of EMIR sets out the legal mandate for ESMA to develop the related RTS specifying the appropriate percentage and time horizons for the liquidation period and the calculation of historical volatility to be considered for the different classes of financial instruments. It also states that CCPs should take into account the objective to limit procyclicality, and the conditions under which portfolio margining practices referred can be implemented. ESMA published its draft regulatory technical standards on APC margin measures on 27 September 2012, alongside other RTS/ITS under EMIR

Pursuant to the third subparagraph of Article 41(5) of EMIR, the Commission is empowered to adopt a Delegated Act to supplement EMIR to limit procyclicality and endorsed the draft RTS submitted by ESMA. The Commission Delegated Regulation (EU) No 153/2013 (the RTS) was published on 23 February 2013 in the EU Official Journal and entered into force on the twentieth day following its publication.

#### 2. Background

ESMA required in Article 28(1) of the RTS that a CCP employs at least one of the three APC margin measures:

- (a) apply a margin buffer at least equal to 25% of the calculated margins which it allows to be temporarily exhausted in periods where calculated margin requirements are rising significantly;
- (b) assign at least 25% weight to stressed observations in the lookback period calculated in accordance with Article 26 of the RTS;
- (c) ensure that its margin requirements are not lower than those that would be calculated using volatility estimated over a 10-year historical lookback period.

Since the adoption of the RTS and the Guidelines, the global market turmoil in March and April 2020 following the emergence of COVID-19 has acted as a live test of the resilience of EU CCPs and the adequacy of their regulatory and supervisory framework.

Several options have been considered by ESMA to improve and to further strengthen the requirements on CCPs by harmonising the policies and procedures by CCPs for selecting,

assessing and reviewing APC measures, and by providing more granularity on the existing tools in the RTS to align their implementation across the EU.

### 3. Quantitative Analysis included in the Consultation Paper

As part of the Consultation Paper published on 22 January 2022, ESMA staff conducted a quantitative analysis based on the simulation of the performance of different APC tools in order to compare their effectiveness and efficiency.

A long historical time series was used for risk factors from six different asset classes, i.e. Equities, Rates, Bonds, Metals, FX and Energy. For each asset class, ESMA built two portfolios, one with a long position and one with a short position on a common benchmark risk factor. For example, for Equities, ESMA built one portfolio with a long position on EURO STOXX 50 and one portfolio with a short position on the same index. Hence, in total, ESMA considered 12 portfolios.

For each portfolio, ESMA simulated the daily margin requirement over a long period using different APC tools. In all cases, the APC tool is applied as an adjustment over the same baseline margin model. The baseline margin model was chosen to be a simple equally-weighted Historical Simulation Value at Risk (HSVaR) model calibrated to select the margin as the 3-days (liquidation period) loss over the last 2 years (lookback period) at a confidence level of 99%<sup>8</sup>.

In order to simulate the performance of some APC options, ESMA needed to identify and to include extreme market movements corresponding to stress scenarios. For this purpose, ESMA devised an algorithm for the identification of relevant historical and hypothetical stress moves. ESMA considered a universe of 20 different risk factors across all six asset classes to select the most relevant moves using a set of rules. The scenario update algorithm was run every 6 months (January and July) considering the period from 1 January 1987 up to one month before each review date (to model the lag between the stress event and including it in the stress scenarios).

For the identification of the historical scenarios on each review date, and for each one of approximately 30 risk factors, ESMA considered the top-5 positive & negative historic moves and the 22-days period with the highest rolling standard deviation of price changes. Moreover, in order to reflect any moves that are relevant for spread movements, ESMA considered the

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<sup>8</sup> It is acknowledged that this model is very simple and there could be other baseline models with better anti-procyclical behaviour. However, the purpose of this analysis is to compare the APC adjustments. Hence, using a model that shows a procyclical behaviour is useful to highlight the differences between the considered APC adjustment.

top-3 positive & negative historic moves of the pairwise linear combinations of the same risk factors. The result is a set of historic stress moves that cover all risk factors and asset classes.

In order to complement the set of extreme market movements with hypothetical stress scenarios, where applicable, ESMA again used a simple algorithm. ESMA first included the antithetics for the top-1 positive & negative historic moves for all risk factors, i.e. assuming that if a risk factor has recorded a positive historic move of  $x\%$ , it may also experience an equivalent negative move, i.e.  $-x\%$ . In practice, ESMA identified the date on which each top-1 move occurred and added this date after reversing the signs of historic moves for all risk factors. Moreover, for each asset class, ESMA identified the maximum positive & negative move for any risk factor and added a scenario modelling a parallel move of a magnitude of 60% of this maximum across all risk factors with the same asset class. The risk factors of the other asset classes were not stressed under this hypothetical scenario.

The set of historical and hypothetical stressed observations produced with the above algorithm was used to build the set of extreme market movements where ESMA explored using individual extreme market movements mechanically selected, including across the entire available history (e.g. for the “25% weight to stress analysis”). In some cases, ESMA also investigated building the set of extreme market movements out of multiple periods of stress, each including a continuous set of historical observations, subject to a specific total length (e.g. 3 different stress periods with a total length of 1 year). In this case, ESMA also used a rolling standard deviation metric to identify the most relevant periods.

The comparison was performed across three dimensions, i.e. stability, conservativeness and the potential for margins to be set at an excessive level, especially during stress periods. The stability was measured using the average (of top-3) and maximum 3-day margin increase over the considered period. For each model and for each day, ESMA calculated the margin change over the previous 3 days and then, ESMA calculated the average of top-3 increases<sup>9</sup> or the maximum increase over the considered period. This metric is key with regards to assessing the anti-procyclical behaviour as it will show how stable a model is and if it may lead to big-step margin changes. ESMA then compared the margin increase against the no-APC case. For example, if the margin increase under a tested model is 5,000 EUR and under the “no-APC model” is 10,000 EUR, the impact would be -50%.

The conservativeness was measured using the average (of top-3) and the maximum margin shortfall over the period. For each model and each day, ESMA compared the margin with the P&L of the portfolio and calculate the % shortfall if the P&L indicates a loss and the margin is smaller than this loss. This metric shows how conservative a model is on an outcome basis. ESMA again compared the % shortfalls of different models over margin. For example, if the

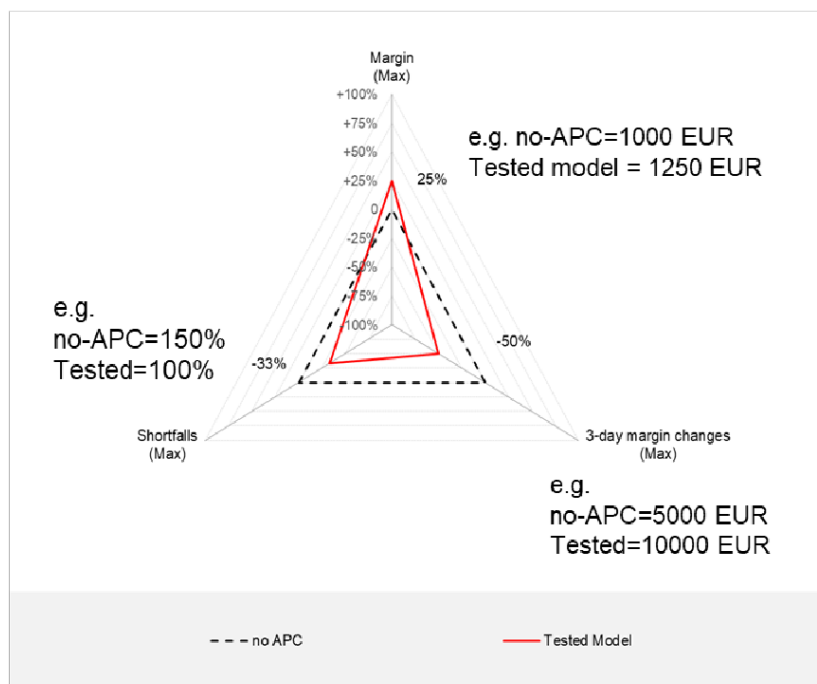
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<sup>9</sup> adjusted to account for overlapping 3-day increases.

margin shortfall under a tested model is 100% and under the “no-APC model” is 150%, the impact is -33%.

Finally, for each model, ESMA also recorded the maximum required margin. This is meant to highlight a model that leads to excessive margin requirements that could also cause liquidity drain and could be problematic especially during stress periods. Here, ESMA used the average and maximum margin amounts over the period. For example, if the peak margin under a tested model is 1,250 EUR and under the “no-APC model” is 1,000 EUR, the impact in this respect would be +25%.

The comparison was also presented using the following radar chart shown here for illustration purposes. In order to compare the different APC tools using a common base, ESMA always showed the “no APC” case using a dashed (black) line. In the example below, the tested model (red line) resulted to a 33% smaller maximum shortfall (more conservative), a 50% smaller maximum margin change (more stable) and a 25% higher maximum margin amount (more costly) if compared to the “no-APC” case.



#### 4. Policy Options

Below are detailed the different corresponding policy options on how to provide further detail on the tools for CCPs to limit procyclicality when adjusting margin requirements, as well as the related cost-benefit analysis.

### General provisions on APC policies

<b>Specific objective</b>	The objective is to support further convergence and coherence in the application of the APC policies to limit the procyclicality of big-step margin changes and to enhance the preparedness of clearing participants.
<b>Policy option 1</b>	A potential policy option when it comes to setting CCP APC policies could be to introduce specific quantitative targets or caps on margin increases (speed limits).
<b>Policy option 2</b>	<p>Another policy approach is to require CCPs to develop and maintain documented policies and procedures for selecting and reviewing APC metrics against internal thresholds based on quantitative metrics.</p> <p>These should specify the choice and justification of the APC tool, the tolerance of the CCP for the potential procyclical effects of its margin revisions, the quantitative metrics used, the frequency of the assessment, the potential follow-up actions, the governance arrangements and explanations on how this information would be publicly disclosed.</p>
Preferred option	<p><b>Policy option 2.</b> ESMA considers that the CCP is best placed to determine internal targets to examine the adequacy of its APC policy based on its own risk-appetite, rather than by setting external thresholds. The CCP should take into consideration the characteristics of its product offering and its membership, as well as its risk management practices, when setting its internal thresholds. In return, CCPs should be able explain how they determine and review their APC margin measures in documented policies and procedures.</p> <p>CCPs should also assess the effectiveness of the selected APC tool against quantitative metrics measuring the stability, the conservativeness and the potential for margins to be set at an excessive level. When using metrics to assess the effectiveness of an APC measure, the CCP should perform this assessment across different price and yields level products for which they may vary significantly.</p>

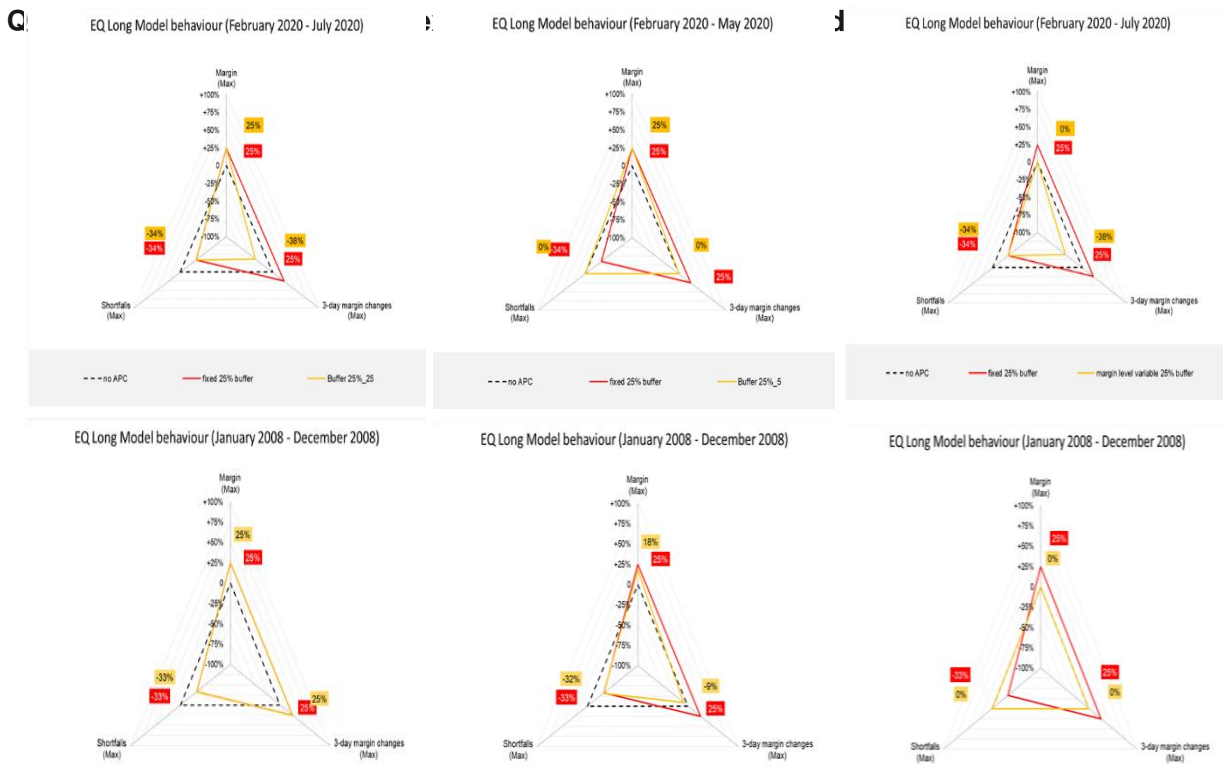
Qualitative impact of the proposed policies	
<b>Option 1</b>	
Benefits	The proposal would effectively cap margin increases for clearing participants.
Compliance costs	ESMA considers this approach to be both counterproductive and potentially harmful. If a CCP is no longer able (or is disincentivised) to

	adjust its margin levels to reflect the current conditions by fear of breaching an APC requirement/target, this could leave the CCP unbalanced and substantially undercollateralised, and thereby exposing its members to counterparty credit risk of other users.
Supervision costs	In practical terms, ESMA also finds it would be very difficult to determine a common threshold which could be applied coherently across products cleared, risk models and APC tools.
<b>Option 2</b>	
Benefits	The added clarity on the decision-making policy and granularity on the content of these procedures are beneficial for the CCP and its users to ensure greater reliability and predictability with regards to the process to mitigate the potential procyclical effect of margin changes.
Compliance costs	As most provisions listed above are already included in the 2018 Guidelines, CCPs are expected to have already implemented most those requirements. In addition, following feedback received in the consultation, ESMA has further clarified that the CCP would only be expected to justify the selected APC tool and not carry out a comparison across all three options.
Supervision costs	The proposal incorporates and enhances where necessary key provisions of the existing Guidelines into the RTS, providing them with a stronger legal standing and thereby reducing the risk of divergence in their application, which should facilitate the review of compliance by the NCA.

## Tool A – Margin buffer under Article 28(1)(a) of the RTS

### (a) Conditions for exhaustion of the margin buffer

<b>Specific objective</b>	<p>ESMA noted in its analysis that if the margin buffer is not exhausted, the absolute margin increase would be larger than in the ‘no-APC’ case. The reason is that the application of the relative (%) buffer will further amplify the margin increase by 25%.</p> <p>ESMA therefore explored whether adopting a more prescriptive approach to defining an optimal exhaustion strategy (i.e. when and how to exhaust the buffer) would help to mitigate the need for a sharp increase of margin requirements.</p>
<b>Policy option 1</b>	<p>Mandate the exhaustion of the buffer for specific cases, e.g. exhaust for big margin changes, smaller margin changes or when the margin is high.</p>
<b>Policy option 2</b>	<p>Introduce a requirement that is similar to existing Guideline 3, requiring the CCP to develop and to have documented policies and procedures setting key elements of the use of this APC option, without prescribing an exhaustion strategy for the buffer.</p>
<b>Preferred option</b>	<p><b>Policy option 2</b>, the CCP is provided with some flexibility in order not to follow the predefined thresholds to avoid potential negative effects of exhausting the buffer at an inadequate time or pace. However, this flexibility would be subject to appropriate governance arrangements set in the CCP’s APC policy.</p>



<b>Qualitative impact of the proposed policies</b>	
<b>Option 1</b>	
Benefits	ESMA finds that there is no evidence of the existence of a buffer exhaustion strategy which would be optimal for all products, market events and stress scenarios.
Compliance costs	Setting prescriptive regulatory requirements on the timing and way to exhaust/replenish the margin buffer could exacerbate the margin increase, if inappropriate.
Supervision costs	As outlined above, ESMA finds it very difficult for regulators or supervisors to identify an optimal exhaustion strategy and therefore for them to assess compliance of the CCP with such requirements.
<b>Option 2</b>	
Benefits	While CCPs would be required to set predefined thresholds as part of their policy, this approach leaves a certain degree of discretion to the CCP to determine the right timing and use of the margin buffer, as a poor use of the margin buffer may reduce the effectiveness of the tool or even exacerbate the procyclical effect of the margin increase.
Compliance costs	As these proposals are already listed under Guideline 3, ESMA expects the costs for the CCPs to comply to be minimal.
Supervision costs	As these proposals are already listed under Guideline 3, the costs for supervisors should be minimal as they should already assess the compliance of the CCP with the Guidelines.

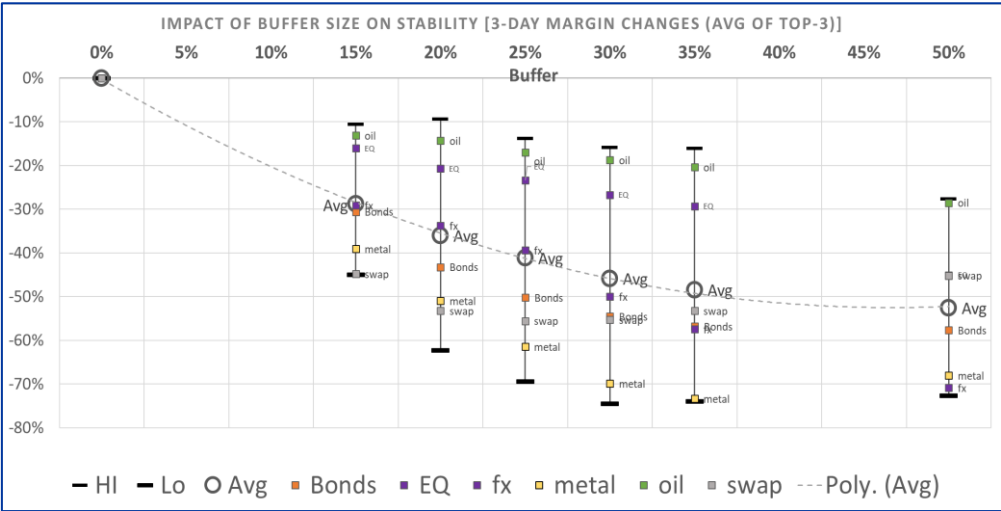
(b) Size of the buffer

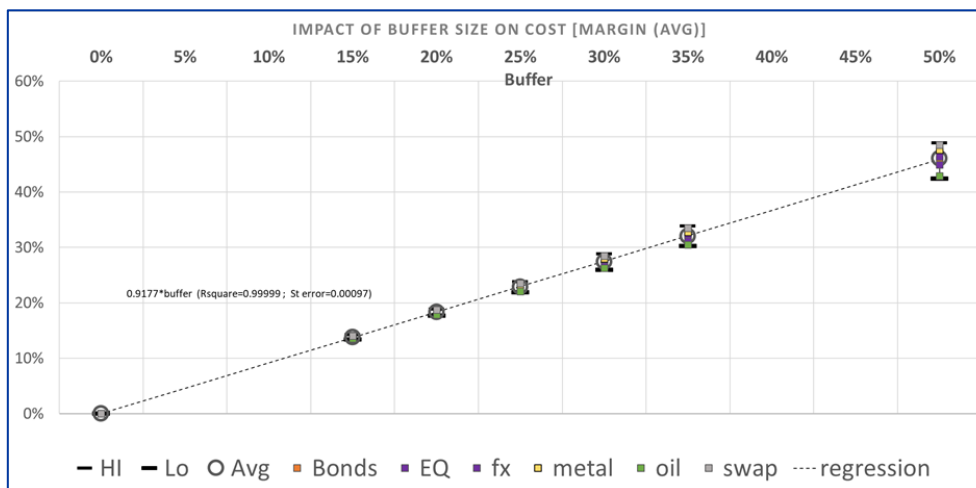
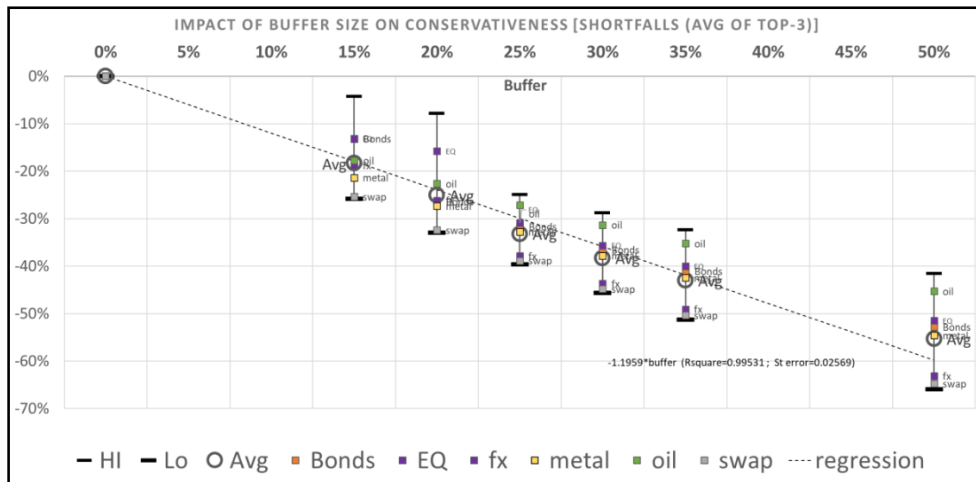
<b>Specific objective</b>	ESMA explored whether setting the minimum margin buffer at a different level or even differentiating per asset class would help improve the effectiveness of tool A.
<b>Policy option 1</b>	Set the minimum buffer requirements at a higher level to better absorb big-step margin changes.
<b>Policy option 2</b>	Keep the current minimum level at 25%, but require that the CCP justifies why the chosen level of the buffer is adequate so that the buffer is set at a higher than 25% if needed.
Preferred option	<b>Policy option 2.</b> ESMA finds that the current level of the margin buffer which is set at “at least 25% of the calculated margins” is adequate and hence does not suggest increasing the minimum required size of the



buffer. However, it is important that this requirement is understood as regulatory minimum. To this effect, the CCP should be able to justify how it determined the size of its buffer and to regularly check its appropriateness.

**Quantitative impact of different buffer sizes across 3 dimensions**





### Qualitative impact of the proposed policies

#### Option 1

**Benefits**

The results confirm that an increased size of the buffer would improve the conservativeness (smaller margin shortfalls) and also increase the average (and peak) margin. Concerning stability, an increased buffer would reduce the big-step margin changes under the “optimal exhaustion strategy” assumption.

**Compliance costs**

However, ESMA finds that the marginal benefit starts to deteriorate when the buffer is set at very high levels. Moreover, if the buffer is not exhausted when needed, this tool would exacerbate margin changes and further fuel procyclicality. This effect would be even stronger for an increased buffer.

Supervision costs	ESMA finds that there is no evidence of an optimal buffer size that supervisors could assess, even for a given asset class in relation to APC, due the differences across assets included in the same asset class.
<b>Option 2</b>	
Benefits	This approach seems to provide an acceptable trade-off between impact on stability, conservativeness, and cost.
Compliance costs	ESMA finds no evidence that would disqualify the existing choice of 25% as an adequate minimum size of the buffer. However, the CCP would have to be able to explain how it determined the size of its buffer and why it is appropriate.
Supervision costs	The regulator should be able to assess whether the buffer is set at an appropriate size given its risk management practices, product offering, and membership structure.

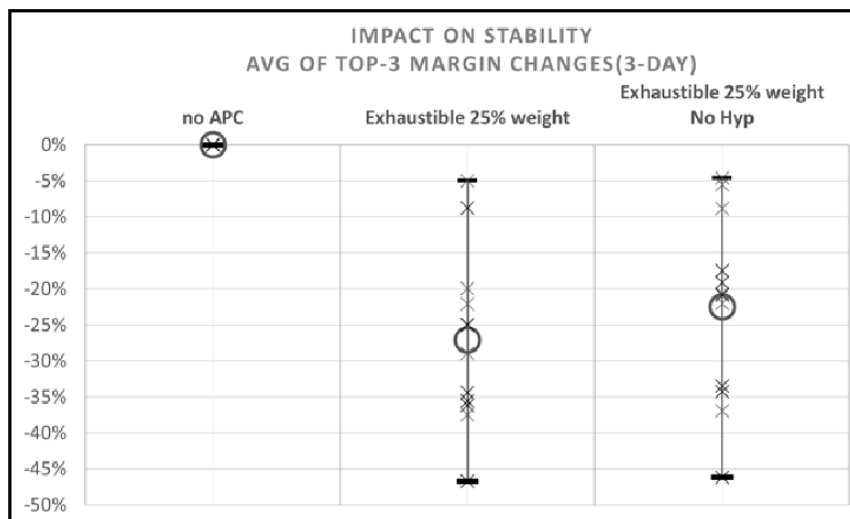
### Tool B – 25 % weight to stressed observations

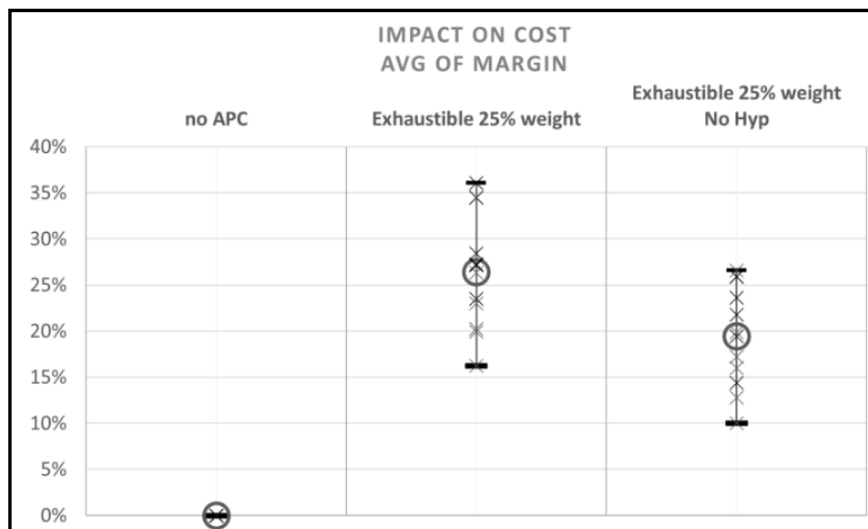
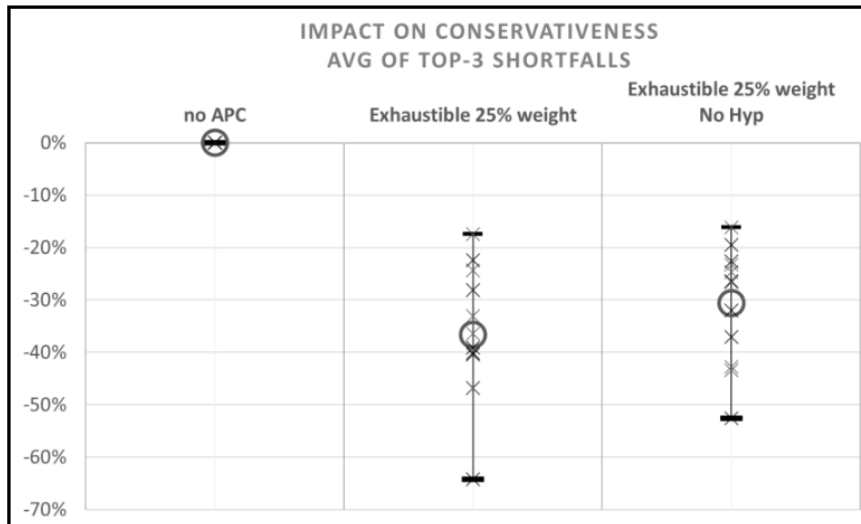
#### (a) Identification of stress scenarios

<b>Specific objective</b>	<p>The effectiveness of the stressed margin tool relies heavily on the identification of the stressed observations and their incorporation in the margin requirement.</p> <p>ESMA assessed whether it was necessary to provide a greater level of detail regarding the selection of stress events to ensure an effective and convergent implementation of this tool.</p>
<b>Policy option 1</b>	Require that CCPs include a set of extreme market movements that include past observations from the most volatile periods and from historical stress scenarios identified under Article 30(2)(2) of the RTS.
<b>Policy option 2</b>	Require that CCPs identify a set of extreme market movements that includes past observations from highly volatile periods, considering also the historical scenarios identified under Article 30(2)(a).
<b>Policy option 3</b>	Require that CCPs also consider including potential future scenarios identified under Article 30(2)(b) of the RTS.
<b>Policy option 4</b>	Introduce a minimum number of observations, in order to avoid having a very large number of observations that could water-down the impact of the most relevant stress observations.

<b>Policy option 5</b>	Require that the CCP discards the most recent stress observations for a specified period of time to avoid a spike in the stress-margin during a stress period.
Preferred option	<p><b>Policy options 2 and 3.</b> This policy approach for historical and hypothetical scenarios allows more flexibility to CCPs to select the set of extreme observations, while requiring them to ensure that it includes an adequate number of severe observations for all margined products which may expose the CCP to the greatest financial risk.</p> <p>It should also be noted that, according to Article 30 of the RTS, if a CCP decides that recurrence of a historical instance of large price movements is not plausible, it can remove the historical observation from the set of observation if it justifies the omission to the Competent Authority.</p>

### Impact of including hypothetical scenarios across 3 dimensions





### Qualitative impact of the proposed policies

Option 1	
Benefits	The link with the market movements reflecting extreme but plausible market conditions ensures that there is a consistency between what the CCP defines as stress in different parts of its risk management framework. It also ensures that the stressed observations identified for the purpose of the APC tool benefit from prudential and procedural provisions already in place for the purpose of the stress testing framework. This provision ensures that the set of extreme market movements defined for the purpose of the APC tool will indeed include the most relevant extreme market movements for all products cleared. It

	also provides clarity on the length of the lookback period used for the same purpose in a way that is consistent and adds no further ambiguity or operational burden in the identification of the relevant observations.
Compliance costs	There are concerns that the requirements would be too stringent and, as a result, stress margin could be set at levels deemed too high for the CCP.
Regulator's costs	The links made to other provisions under the RTS on CCP requirements should simplify the assessment of compliance of the CCP with EMIR.
<b>Option 2</b>	
Benefits	This provision provides more flexibility to allow the CCP to adequately estimate what margin could look like in times of stress and ensure the existence of an effective APC tool – while keeping the benefits in option 1 of harmonising prudential provisions and procedures already existing in the RTS.
Compliance costs	As the CCP would have more flexibility in identifying the stress scenarios, the CCP would have more flexibility in determining the appropriate levels for stress margin.
Supervision costs	The links made to other provisions under the RTS on CCP requirements should simplify the assessment of compliance of the CCP with EMIR.
<b>Option 3</b>	
Benefits	<p>ESMA finds that the inclusion of hypothetical scenarios increased the margin and reduced the magnitude of the short-term margin changes and the margin shortfalls. Including movements implied by hypothetical scenarios can be beneficial especially where there are events that are plausible but cannot be found in history.</p> <p>ESMA also finds the inclusion of multiple hypothetical scenarios that are not always relevant across all products can somehow mute the impact from severe historical stress scenarios. Therefore, their inclusions should be left at the discretion of the CCP.</p>
Compliance costs	The CCP should have sufficient flexibility to identify appropriately the stress scenarios for the stress margin.
Supervision costs	The links made to other provisions under the RTS on CCP requirements should simplify the assessment of compliance of the CCP with EMIR.

<b>Option 4</b>	
Benefits	Defining a minimum number of stress observations could help avoid situations where not enough stress observations are included to ensure that the 'stress' margin is adequately higher than the unadjusted margin.
Compliance costs	ESMA finds it very difficult to define any such hard thresholds for the number of scenarios to be included considering that such requirements would be imposed to CCPs having very diverse sets of margined products, models and calibrations.
Supervision costs	The above consideration would apply as well for supervisors when assessing the CCP's compliance.
<b>Option 5</b>	
Benefits	This option could help avoid a spike in the stress-margin during a stress period.
Compliance costs	ESMA finds it would be difficult to justify a specific choice for the length of the period to be excluded. Moreover, introducing a specific period could lead to cliff edge effects since a CCP (or even multiple CCPs) would be required to suddenly (and simultaneously in case of multiple CCPs) include the recent stress observation even if the stress period has not ended.
Supervision costs	The supervisors would find the same difficulties in assessing the compliance of the CCP with the requirement if it is difficult to identify an adequate period of time.

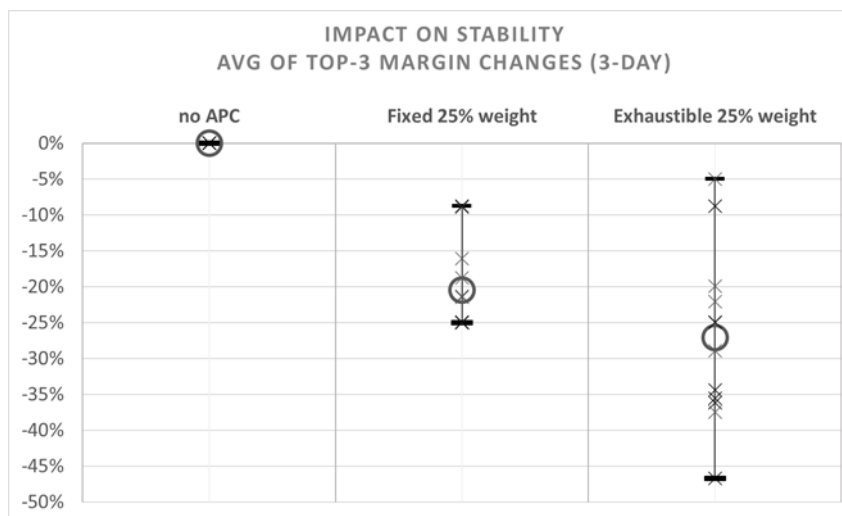
(b) Calculation of stress margin

<b>Specific objective</b>	The aim is to ensure an efficient functioning of the 25% stress margin tool and a more consistent application across CCPs, in order to limit procyclicality.
<b>Policy option 1</b>	Allow the CCP to temporarily reduce or even exhaust the implied buffer (weight to stress) when margins are rising significantly
<b>Policy option 2</b>	Require the CCP to revert to the normal weighting after a specific period of time.
Preferred option	<b>Policy option 1.</b> A provision has been added to allow the CCP to temporarily reduce or even exhaust the implied buffer (weight to stress) when margins are rising significantly, without specifying an exhaustion or replenishment strategy for the buffer.

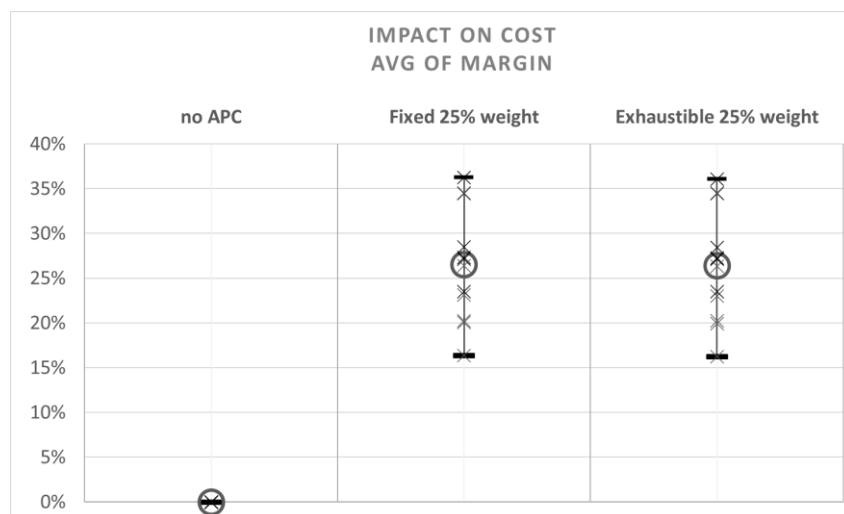
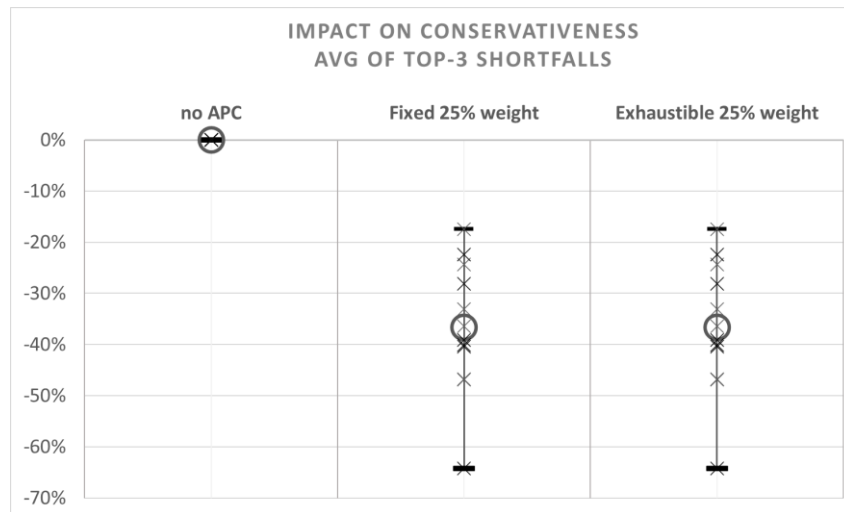
ESMA proposes that the CCP should have predefined thresholds for its temporary ‘weight-reduction strategy’, as well as the discretion not to follow these thresholds if deemed necessary. ESMA also added that the CCP should have a documented policy setting out the circumstances under which the weight could be temporarily reduced, including metrics and thresholds to determine when margin is rising significantly, the conditions for replenishment and the related governance arrangements.

To harmonise the calculation of stress margin, ESMA requires that the CCP uses the same model and parameters for stress margin as for the unadjusted margin, except for the liquidation period which should be replaced by the set of extreme market movements, and avoids scaling techniques.

**Quantitative impact of exhaustible 25% weight across 3 dimensions**







<b>Qualitative impact of the proposed policies</b>	
<b>Option 1</b>	
<b>Benefits</b>	This option would allow the CCP to alleviate the effects from rapid and sharp margin increases, by ensuring that the stress margin can effectively be exhausted.
<b>Compliance costs</b>	The compliance costs should be minimal and would be linked to the requirement for the CCP to develop a documented policy setting out the circumstances under which the weight could be temporarily reduced, including metrics and thresholds to determine when margin is rising significantly, conditions for replenishment and related governance

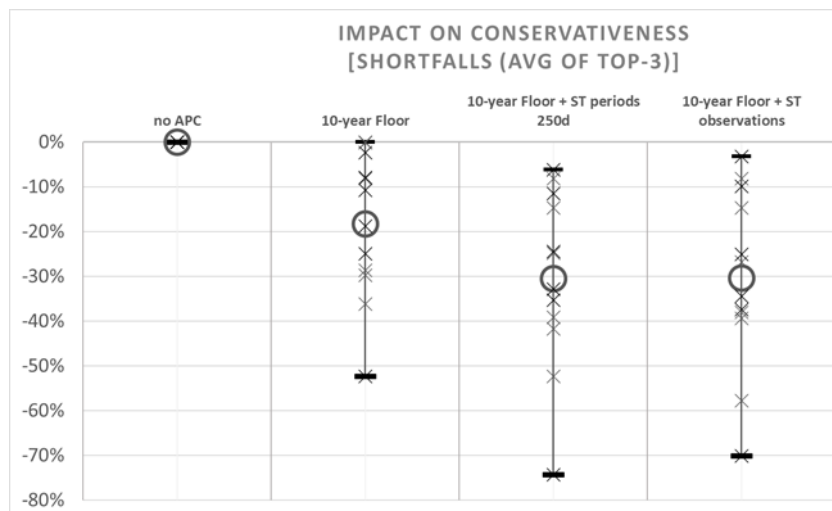
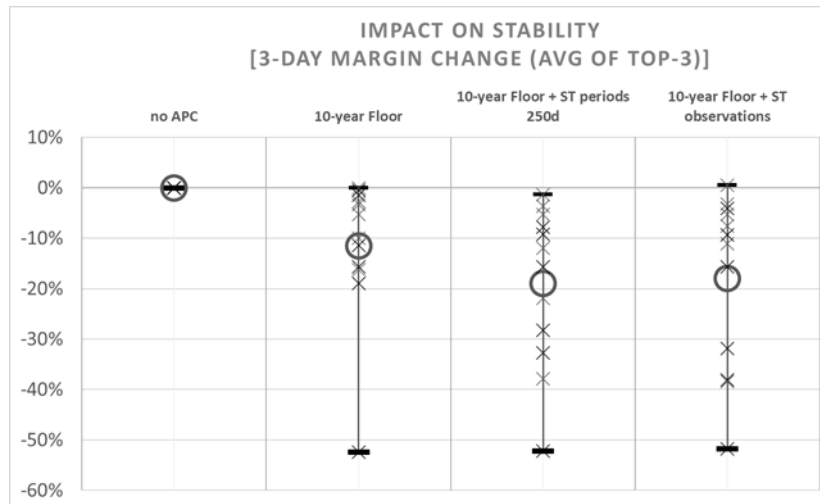
	arrangements. The costs should be similar to those entailed by the Guidelines for tool A.
Regulator's costs	The additional requirement that the CCP uses the same model and parameters for stress margin as for the unadjusted margin, except for the liquidation period, should help simplify the supervisor's assessment of compliance of the CCP.
<b>Option 2</b>	
Benefits	This policy option could help avoid that the CCP remains unprotected in case of new margin changes.
Compliance costs	ESMA finds it would be difficult to justify a specific choice for the length of the period after which the CCP would have to revert to the normal weighting.  In addition, ESMA finds that introducing a maximum length could lead to cliff edge effects since the CCP would be required to suddenly increase the weight even when the stress period would not be over. This effect could be even more detrimental considering that multiple CCPs would have to simultaneously increase the weights and margins.
Regulator's costs	The above consideration would apply as well for supervisors when assessing the CCP's compliance with such a requirement.

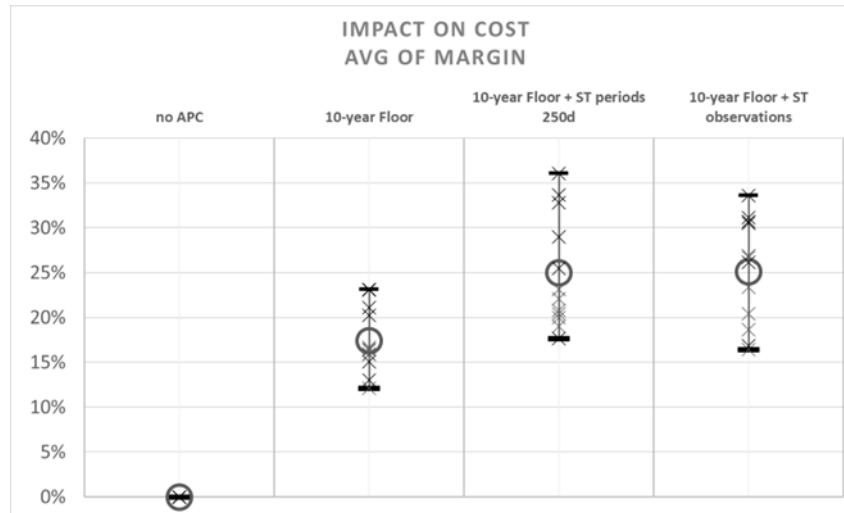
### Tool C – 10-year margin floor

<b>Specific objective</b>	The aim is to avoid that the margin floor becomes too low in periods of low volatility, which would diminish the effectiveness of the tool in limiting procyclicality under stress periods.
<b>Policy option 1</b>	Extend the 10-year lookback period to include stress observations.
<b>Policy option 2</b>	Include stress observations in the 10-year lookback period.
Preferred option	<b>Policy option 2.</b> The inclusion of the additional stress observations, while avoiding the diluting effect of simply extending the lookback period, helps to build a floor at a higher level and overall improves the stability and conservativeness of the margins.  With regard to the identification of the stress observations that are to be included, there is a significant benefit in using a methodology that is similar to what is proposed to be used for the APC option under Article 28(1)(b), i.e. "25% weight to stress".

To further harmonise the implementation of tool C, ESMA introduces into the RTS the recommendation included in Guideline 4 according to which the margin floor should be computed in a manner that continues to meet the requirements set out in EMIR and the RTS, including compliance with Articles 24 on margin percentage, 26 on time horizons for the liquidation period and 27 on portfolio margin of the RTS. ESMA also introduces a ban on the use scaling techniques for this tool.

### Quantitative impact of changes to 10-year margin floor across 3 dimensions





<b>Qualitative impact of the proposed policies</b>	
<b>Option 1</b>	
Benefits	The benefit of using a very long lookback period is that it will increase the probability that all relevant stress events will be included in the floor.
Compliance costs	ESMA finds that merely extending the look period beyond 10 years may have the counterproductive effect of diluting stress events into a great proportion of non-stress events due to the longer period of time. This would reduce the effectiveness of including these stress events in the lookback period of the floor.
Supervision costs	As per above, it may be counterproductive for a supervisor to assess CCP compliance with such a requirement.
<b>Option 2</b>	
Benefits	ESMA finds that the inclusion of the additional stress observations, while avoiding the diluting effect of simply extending the lookback period, helps to build a floor at a higher level and overall improves the stability and conservativeness of the margins.
Compliance costs	The CCP would have to face some additional costs for the identification and inclusion of stress scenarios into the margin period.

Supervision costs	The costs for supervisors should be minimal as the additional requirements are aligned with other provisions under the EMIR RTS and incorporate guidance already existing under Guideline 4.
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## 5.3 Annex III

### Final technical standards

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

of XX Month YYYY

**amending the regulatory technical standards laid down in Delegated Regulation (EU) No 153/2013 as regards measures against the potential procyclical effects of margin revisions**

(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 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories (1), and in particular Article 41(5) thereof,

Whereas:

(1) Commission Delegated Regulation (EU) No 153/2013 (2) lays down regulatory technical standards on requirements for central counterparties (CCPs) to adopt forward-looking margin methodologies that limit the likelihood of procyclical changes in margin requirements to avoid causing or exacerbating financial instability. CCPs are currently required to choose between three options to address the potential procyclical effects of margin revisions to the extent that the soundness and financial security of the CCP is not negatively affected.

(2) However, the propensity of margin requirements to be low during benign times and to increase sharply in times of market stress remains a concern, as it may further exacerbate and diffuse stress into the financial system if insufficiently addressed. Moreover, the implementation of the anti-procyclicality measures and policies varies widely across CCPs.

(3) In order to limit the potential procyclical effects of big steps margin changes when applying a margin buffer at least equal to 25 % of the calculated margins, a CCP should consider setting the margin buffer at a higher level than the minimum requirement to ensure that it is sufficiently robust and justify its adequacy taking into account its risk management practices, its product offering and its membership composition, in particular for non-financial counterparties. The CCP should develop

and maintain documented policies and procedures setting out how and when the CCP intends to exhaust and to replenish the margin buffer to ensure that the CCP is ready to exhaust the buffer when appropriate.

(4) In order to reduce the magnitude of short-term margin changes and margin shortfalls when assigning a 25% weight to stress margin, a CCP should be able to temporarily reduce or even exhaust the buffer when margins are rising significantly and to document its policy setting out the circumstances under which the weight could be temporarily reduced, the conditions for replenishment and the related governance arrangements. When calculating the stress margin, the CCP should consider including past observations from highly volatile periods, including historical and hypothetical scenarios, in its set of extreme market movements to ensure that the stress margin is appropriately calibrated. To harmonise the calculation of stress margin, the CCP should use the same model and parameters for stress margin as for the unadjusted margin, except for the liquidation period which should be replaced by the set of extreme market movements, and should not use scaling techniques.

(5) In order to avoid that margin becomes too low in periods of low volatility when applying a margin floor, a CCP should include stress observations in the 10-year lookback period. When selecting the stress observations, the CCP should consider including past observations from highly volatile periods, including historical and hypothetical scenarios, in its set of extreme market movements to ensure that the tool remains efficient from an anti-procyclicality perspective. To further harmonise the implementation of this tool, the CCP should use the same model and parameters as for its margin requirements and should not use scaling techniques.

(6) In order to further harmonize the policies and procedures by CCPs for selecting, assessing and reviewing anti-procyclicality measures, CCPs should set out at least the justification for the selected anti-procyclicality tool, the tolerance of the CCP for procyclicality, the quantitative metrics used and the frequency of the assessments, the planned actions to address certain outcomes, as well as the governance arrangements and public disclosure surrounding the CCP's assessment to communicate these to their competent authority and to their users.

(7) When selecting and revising the parameters of the margin model in order to better reflect current market conditions, a CCP should apply the options to address the potential procyclical effects of margin revisions to all products and cover for each product at a minimum the risk factors considered material by the CCP, in order to help avoid, when possible, disruptive or big step changes in margin requirements to limit the potential contagion effect to the rest of the financial system.

(8) When assessing the potential procyclical effect of their margin models, CCPs should assess their policies against quantitative metrics considering the stability of margins over time, their conservativeness, as well as the potential for margins to be set at an excessive level and consider performing its assessment across different price and yields levels for products for which these may

vary significantly, in order to appropriately anticipate the potential procyclical effect of margin revisions.

(9) Delegated Regulation (EU) No 153/2013 should therefore be amended accordingly.

(10) This Regulation is based on draft regulatory technical standards submitted by the European Securities and Markets Authority (ESMA) to the Commission following consultation of the European Banking Authority and the European System of Central Banks.

(11) ESMA 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 Securities and Markets Stakeholder Group established in accordance with Article 37 of Regulation (EU) No 1095/2010 the European Parliament and of the Council,

HAS ADOPTED THIS REGULATION:

*Article 1*

(1) Article 28 of Delegated Regulation (EU) No 153/2013 is replaced by the following:

‘1. When a CCP selects and revises the parameters of its margin model or revises the level of its margin requirements to reflect current market conditions, the CCP shall take into account any potential procyclical effects of such revision and select one of the following options:

- (a) applying a margin buffer, at least equal to 25 % of the calculated margin requirements, which the CCP allows to be temporarily exhausted in periods when calculated margin requirements are rising significantly;
- (b) assigning at least a 25% weight to the stress margin requirements and the remaining weight to the unadjusted margin requirements in accordance with Articles 24, 25, 26 and 27 so as to reach a 100% weight at all times; or
- (c) ensuring that its margin requirements are not lower than a margin floor that is recalibrated and recomputed at the same frequency in compliance with Articles 24, 26 and 27, while the time horizon under Article 25 is replaced by the most recent 10 years plus a set of additional extreme market movements, unless the 10 years already include the set of extreme market movements.

2. A CCP may employ more than one option provided that each option is implemented in its entirety as set out on in paragraph 1(a), 1(b) or 1(c) respectively.

3. A CCP shall ensure that the options set out in paragraph 1 are applied to all products and cover, for each product, the risk factors that the CCP considers material which could, depending on the CCP’s activity and its margin models, potentially lead to big-stepped changes in margin



requirements, and could include price shifts, foreign exchange shifts, implied volatility shifts, maturity spreads and portfolio margin offsets, as applicable. A CCP shall consider the impact that the risk factors change will have on the margin requirements, including for products with non-linear dependence on risk factors.

4. A CCP may use different options set out in paragraph 1 for different risk factors or apply the same option across all risk factors by applying the measure independently to each risk factor or by using internally consistent scenarios across risk factors. The CCP may apply the options set out in paragraph 1 at product or portfolio level.

5. For the purpose of using the option set out on in paragraph 1(a), the CCP shall:

- (a) assess whether a higher buffer is needed, justify the size of the buffer and regularly assess its appropriateness taking into account its risk management practices, the characteristics of its product offering and its membership structure;
- (b) consider introducing a floor on the margin requirements, to avoid that the buffer is too low in benign times taking into account its risk management practices, the characteristics of its product offering and its membership structure;
- (c) develop and maintain documented policies and procedures setting out:
  - i) the circumstances under which the buffer could be temporarily exhausted or subsequently replenished;
  - ii) the metrics and thresholds used to determine when margin requirements are rising significantly so as to potentially cause the exhaustion of the margin buffer, and the conditions for replenishment of the buffer following its exhaustion;
  - iii) the pace and extent to which the buffer should be exhausted, partially or totally; and
  - iv) the governance arrangements for the approval of the exhaustion and replenishment of the buffer, including cases where the CCP would not follow its predefined thresholds.

6. For the purpose of using the option set out on in paragraph 1(b), the CCP shall:

- (a) identify and review at least annually a set of extreme market movements that include past observations from highly volatile periods, considering also the historical scenarios identified under Article 30(2)(a). The CCP shall also consider including potential future scenarios identified under Article 30(2)(b). The CCP shall demonstrate that the set includes an adequate number of extreme market movements for all margined products which could expose the CCP to the greatest financial risk. A CCP shall review the set more frequently when market

developments or material changes to the set of contracts cleared by the CCP affect the underlying assumptions, taking into account the procyclical effects from such revision.

- (b) calculate stress margin requirements using the same model and parameters as for unadjusted margin requirements in compliance with Articles 24, 26 and 27, except for the time horizon under Article 25 that is to be replaced by the set of extreme market movements.
- (c) recompute the stress margin requirements at least daily and shall not use scaling techniques that can affect the severity of observations or calculated stress margin. If the stress margin requirements are smaller than the unadjusted margin requirements, the CCP shall apply a 100% weight to the unadjusted margin requirements and 0% to the stress margin requirements. Where calculated margin requirements are rising significantly, the CCP may temporarily increase the weight that is applied to the unadjusted margin requirements and equally reduce the weight applied to the stress margin requirements.
- (d) develop and maintain documented policies and procedures setting out:
  - i) the circumstances under which the weight that is applied to the unadjusted margin requirements could be temporarily increased;
  - ii) the metrics and thresholds to determine when margin requirements are rising significantly and which may warrant the temporary increase of weight applied to the unadjusted margin requirements, and the conditions for its subsequent reduction; and
  - iii) the governance arrangements for the approvals for the increase and reduction of weight of the unadjusted margin requirements, including cases where the CCP would not follow the predefined weight.

7. For the purpose of using the option set out on in paragraph 1(c), the CCP shall:

- (a) identify and review at least annually a set of extreme market movements that include past observations from highly volatile periods, considering also the historical scenarios identified under Article 30(2)(a). The CCP shall also consider including potential future scenarios identified under Article 30(2)(b). The CCP shall demonstrate that the set includes an adequate number of extreme market movements for all margined products which could expose the CCP to the greatest financial risk. A CCP shall review the set more frequently when market developments or material changes to the set of contracts cleared by the CCP affect the underlying assumptions, taking into account the procyclical effects from such revision; and
- (b) when calculating the margin floor, not use scaling techniques that can affect the severity of observations, extreme market movements or calculated floor margin.'

(2) the following article is inserted:

*‘Article 28a*

**Policy and procedures on procyclicality**

1. A CCP shall develop and maintain an internal policy and procedures setting the arrangements used to limit the procyclicality of margin requirements. The CCP shall review the policy and procedures at least annually. The CCP’s internal policy and procedures shall include at least:
  - (a) the justification behind the choice of the selected option for mitigating the potential procyclical effects of margin revisions as provided for in Article 28(1), taking into account the CCP’s risk management practices, the characteristics of its product offering and its membership structure. The justification may be provided for a group of products or risk factors sharing the same option and common characteristics in terms of potential procyclical behaviour;
  - (b) the tolerance of the CCP for the potential procyclical effects of its margin requirements revisions including a tolerance threshold for big step changes in margin requirements;
  - (c) the quantitative metrics it uses to holistically assess the potential procyclical effects of its margin requirements and add-ons, especially during stress periods, including the stability of margin requirements, in particular over short-term time periods, and their conservativeness, as well as the potential for margin requirements to be set at an excessive level;
  - (d) the frequency at which the CCP conducts the assessment with respect to the selected option for mitigating the potential procyclical effects of margin requirements revisions as provided for in Article 28(1), the design and calibration choices for the selected option and the performance of the selected option against the quantitative metrics;
  - (e) the potential actions it could take to address the outcomes of the assessment;
  - (f) the governance arrangements surrounding the establishment of the CCP’s tolerance for procyclicality, the validation of the CCP’s selected option for mitigating the potential procyclical effects of margin requirements revisions as provided for in Article 28(1), including the consultation of the risk committee, the reporting of the outcomes of the assessment and approval of actions it proposes to take in relation to the outcomes; and
  - (g) the public disclosure of information on the functioning and performance of the CCP’s selected option for mitigating the potential procyclical effects of its margin requirements revisions as provided for in Article 28(1).

2. The CCP shall assess and demonstrate at least annually the performance of its margin model in mitigating the potential procyclical effects of margin requirements revisions with a focus on the effectiveness of the selected option under Article 28(1). In accordance with Article 41(2) of Regulation (EU) No 648/2012, the competent authority shall validate the model and parameters and shall present the outcome of this assessment to the college for the purpose of the adoption of a college opinion.

3. When assessing the procyclicality of its margin requirements, the CCP shall consider performing its assessment across different price and yields levels for products for which these may vary significantly.’;

#### *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.

It shall apply from 12 months following that of its publication in the Official Journal of the European Union / [insert date].

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]*

(1) OJ L 201, 27.07.2021, p. 1–59

(2) OJ L 52, 23.2.2013, p. 41–74