



European Securities and  
Markets Authority

# Consultation Paper

**Review of RTS No 153/2013 with respect to procyclicality of margin**



## Responding to this paper

The European Securities and Markets Authority (ESMA) invites comments on all matters in this Consultation Paper and in particular on the specific questions summarised in Annex 1. Comments are most helpful if they:

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

ESMA will consider all comments received by **31 March 2022**.

All contributions should be submitted online at [www.esma.europa.eu](http://www.esma.europa.eu) under the heading 'Your input - Consultations'.

### Publication of responses

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

### Data protection

Information on data protection can be found at [www.esma.europa.eu](http://www.esma.europa.eu) under the heading '[Data protection](#)'.

### Who should read this paper?

All interested stakeholders are invited to respond to this consultation paper. In particular, responses are sought from central counterparties (CCPs), the clearing members as well as the counterparties accessing CCP services as clients of clearing members.

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# 1 Executive Summary

## Reasons for publication

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.

While EU CCPs have overall performed well throughout the crisis, ESMA is issuing this consultation to discuss the current calibration of the APC tools and to consider whether the proposed revisions to the Regulatory Technical Standards (RTS) may be necessary.

This consultation paper seeks stakeholders' views on the draft amendments to Commission Delegated Regulation (EU) No 153/2013 with regard to the RTS on requirements for CCPs developed by ESMA, including requirements aiming to limit the procyclicality of margin requirements (Article 28 RTS) under Regulation No 648/2012 (EMIR).

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ESMA can initiate the review of RTS it has developed to ensure they fulfil their objective and ESMA is conducting such a review for the EMIR RTS with regard to the provisions related to requirements for CCPs aiming to limit the procyclicality of margin requirements.

ESMA considers in the first part of this consultation different proposals to further harmonize the policies and procedures for selecting and reviewing the anti-procyclicality (APC) margin measures.

In the second part of this consultation, ESMA proposes to provide further 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.

## Next Steps

The deadline to submit feedback to this consultation is **31 March 2022**.

As provided for by Regulation (EU) No 1095/2010 of the European Parliament and Council establishing ESMA, following the analysis of the responses to the public consultation, ESMA will publish a final report with the amended draft RTS and submit it to the European Commission for adoption.

In addition, before finalising its draft to be submitted to the European Commission and in line with the regulatory mandate to draft these regulatory technical standards, ESMA will consult the following authorities: for amendments under Article 41(5), the European Banking Authority (EBA) and the European System of Central Banks (ESCB).

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## 2 Introduction

1. EMIR introduced provisions to improve transparency and reduce the risks associated with the OTC derivatives market and established common rules for Central Counterparties (CCPs) and for trade repositories.
2. In particular, Title IV of EMIR introduced common requirements for CCPs and mandated ESMA to develop draft Regulatory Technical Standards (RTS) on a number of areas, while delegating powers to the European Commission to adopt the RTS.
3. The Commission Delegated Regulation (EU) No 153/2013 adopted the RTS on requirements for CCPs developed by ESMA, including requirements aiming to limit the procyclicality of margin requirements (Article 28).
4. ESMA is seeking stakeholders' views on the proposed draft RTS amending Article 28 of the Commission Delegated Regulation No 153/2013. The background, suggested amendments, rationale and specific questions on which we are seeking feedback are described and discussed in the following sections.

## 3 Procyclicality of Margins

### 3.1 Background on existing measures under EMIR

5. 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 increase in times of market stress which is captured in the notion of procyclicality of margin requirements.
6. EMIR acknowledges<sup>1</sup> that margin calls and haircuts on collateral may have procyclical effects and therefore CCPs, their Competent Authorities, as well as ESMA should adopt measures to prevent 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. Article 41(5) of EMIR sets out the legal mandate for ESMA to develop the respective 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. CCPs should take into account the objective to limit procyclicality, and the conditions under which portfolio margining practices referred can be implemented. Article 28(1) of the RTS then requires that a CCP employs at least one of the three anti-procyclicality margin measures:

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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.

- 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.
7. 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 (“Guidelines”)<sup>2</sup>. 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>.
8. 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 I recommends the regular assessment and review of CCP APC policies based on quantitative metrics;
  - b) Guideline II provides guidance on the application of APC measures to at least all material risk factors;
  - c) Guideline III focuses on the modalities of the exhaustion and replenishment of the margin buffer under Article 28(1)(a) of the RTS;
  - d) Guideline IV focuses on the computation of the margin floor under Article 28(1)(c) of the RTS; and
  - e) Guideline V provides guidance on the disclosure of APC measures by CCPs.
9. Since the adoption of 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.
10. 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”)

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

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

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

11. 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.
12. While EMIR anti-procyclicality measures have overall helped mitigate procyclical margin increases, ESMA believes there is some room for improvement considering the lessons learnt from the COVID-19 driven market events.
13. With this consultation, ESMA is requesting feedback on potential improvements to the existing APC tools, notably by considering amendments to the RTS to specify their application under Article 28, based on the mandate provided by EMIR Article 41(5) (See Annex II).

## **3.2 Structure of ESMA's consultation paper**

14. One key lesson learnt from the COVID-19 stress episode is that, despite EU CCPs being subject to the same RTS and to common Guidelines to support a coherent implementation of EMIR, EU CCP margin models have reacted differently, with some models performing in a more procyclical manner than others.
15. While these differences can to a certain extent be explained by the type of product cleared or by the APC tool used and its effectiveness under specific market conditions, ESMA notes that the implementation of these measures still varies widely across CCPs in the Union.
16. ESMA has identified divergent implementations of the APC tools which seem to be due, on the one hand, to the non-binding character of the Guidelines, and on the other hand, to the need for higher granularity of the relevant provisions.

### **3.2.1 General framework for APC measures**

17. To support further convergence and coherence in the application of the APC measures, ESMA considers in the first part of this consultation different proposals to further harmonize the policies and procedures by CCPs for selecting, assessing and reviewing APC measures against relevant quantitative metrics.
18. To this effect, ESMA proposes to incorporate and enhance, 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.

### 3.2.2 Providing further granularity on APC measures

19. In the second part of this consultation, ESMA proposes 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. This is achieved by introducing some provisions of the existing Guidelines into the RTS, notably for the tools defined under Article 28(1)(a) and (c).
20. However, ESMA notes that the Guidelines do not provide guidance on how to apply the APC tool under Article 28(1)(b), contrary to what ESMA had initially considered in the consultation phase of the Guidelines. While ESMA had considered to include the stress scenarios identified under Article 30 of the RTS for the purpose of this tool, it was acknowledged at the time that the Guidelines may not be the right tool to achieve a common, uniform and consistent application. The proposal to issue Guidelines on the implementation of Article 28(1)(b) was therefore dropped.
21. Considering that divergent implementations have been identified also for this APC tool, ESMA believes that this consultation on the adequacy of the EMIR APC measures is the right moment to consider whether the RTS (rather than Guidelines) should provide further granularity for the implementation of this APC tool and makes proposals to this effect under a revised Article 28(1)(b) RTS.

### 3.3 Implications for existing Guidelines

22. As a general remark, ESMA notes that Guidelines are supervisory convergence tools and are therefore directed at Competent Authorities. When introducing the provisions of the Guidelines into the RTS, ESMA has instead addressed provisions directly to CCPs, as they are responsible for the application of APC tools under the RTS.
23. It is ESMA's view that, once these provisions are included into the RTS and come into effect, the purpose and value of Guidelines is diminished. The provisions in the RTS which overlap in substance with the Guidelines will overrule the latter which should cease to apply. ESMA would therefore amend the Guidelines by deleting the parts thereof which will have been incorporated into the final RTS.

### 3.4 Link to the international work

24. The COVID-19 pandemic is and remains a global event which has impacted markets across the globe and has triggered similar policy considerations across jurisdictions on the proper calibration of the financial regulatory system, including margin measures. The Financial Stability Board (FSB) issued in November 2020 a Holistic review of the March market turmoil<sup>5</sup>, which called for, among other things, further work to examine "*whether market participants were fully prepared for the margin calls they experienced, their ability to liquidate assets to meet margin calls under stressed conditions, and the role of*

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<sup>5</sup> FSB, [Holistic review of the March market turmoil](#), November 2020

*marginning practices both in centrally cleared and bilateral markets in amplifying funding strains”.*

25. Drawing on the findings in this report, the BCBS, CPMI and IOSCO are consulting<sup>6</sup> on six potential areas for further work at the international level, including on a workstream evaluating the responsiveness of centrally cleared Initial Margin models to market stresses with a focus on impacts and implications for CCP resources and the wider financial system, and a workstream on increasing transparency in centrally cleared markets.
26. Considering the uncertainty around the outcome of the international work and the fact that the EU already has detailed rules on APC measures for CCPs, ESMA has opted for a balanced approach addressing the sometimes-divergent implementation of the existing APC tools and policies to increase the resilience of the EU financial system, without adding new requirements on EU CCPs which could lead to inconsistent or potentially duplicative rules should new standards be developed at the international level.
27. Following this arbitrage, this consultation does 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 V.
28. ESMA believes it is therefore premature to make revisions on CCP disclosure requirements at this stage but reserves itself the right to consider further changes to the RTS once policy discussions have progressed at the international level. Guideline V would therefore continue to apply to Competent Authorities, after the entry into force of the revised RTS.

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

### **4.1 Regular assessment and reviews of APC measures**

29. Guideline 1 requires Competent Authorities to ensure that CCPs conduct regular assessments of their procyclicality measures with the use of quantitative metrics and develop policies to review APC measures that would specify the risk appetite, the metrics used, the frequency of assessment, the potential follow-up actions and the governance arrangements.
30. The following section outlines proposals by ESMA to improve the overall framework for selecting and reviewing APC measures and, where relevant, introduces relevant provisions from Guideline 1 into the revised RTS, with adjustments as necessary.

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<sup>6</sup> BCBS-CPMI-IOSCO, Consultative report, [Review of marginning practices](#), October 2021

#### 4.1.1 APC policies by CCPs

31. 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.
32. To this effect, Guideline 1 requires that Competent Authorities ensure that any CCP supervised by them develops “a policy for the review of its APC measures. The policy should at least 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.”
33. Against the observed divergence in implementation of APC measures by EU CCPs during the March 2020 market events, ESMA views favourably the introduction of a requirement directly on CCPs to develop policies to review the anti-procyclicality policies, which therefore should be reflected in the revised RTS.
34. ESMA believes that 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.

#### 4.1.2 Choice of the APC tool

35. In addition to the above list, ESMA proposes 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 justify how it is most suitable for the characteristics of its product offering, its membership and its risk management practices.
36. ESMA believes this option would be preferable to requiring the CCP to model and compare the three APC tools when selecting and reviewing its APC measures, as this would create a significant burden on the CCP. This has been reflected in a new Article 28a of the draft RTS.

**Question 1: Do you agree that CCPs should be able to explain and justify their APC tool choices?**

#### 4.1.3 APC targets

37. ESMA notes that a potential proposition when it comes to setting CCP APC policies could be to introduce specific quantitative targets or caps on margin increases (speed limits). Some suggest that APC arrangements could include thresholds or targets for maximum margin changes within a specific time period after which the CCP would no longer be able

to increase its margins to the maximum in the current market conditions (e.g. a maximum of 25% of margin change over a 3-day period) without being in breach of the APC requirement.

38. ESMA views proposals in favour of introducing speed limits as both counterproductive and potentially harmful. If a CCP is no longer able (or is disincentivized) 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 undercollateralized, and thereby exposing its members to counterparty credit risk of other users.
39. Moreover, in practical terms, ESMA believes it would be very difficult to determine a common threshold which could be applied coherently across products cleared, risk models and APC tools.
40. Instead, ESMA believes 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.
41. It is acknowledged that this would leave a level of subjectivity as to which level of procyclicality is acceptable. As explained, it would be difficult to define common targets that would be applied consistently across CCPs and in all cases, this would have to be applied consistently at an international level. ESMA believes it is therefore premature to introduce such provisions at this stage but reserves itself the right to consider further changes once policy discussions have progressed at the international level.
42. According to EMIR Article 28, the risk committee shall advise the board on any arrangements that may impact the risk management of the CCP. It is therefore expected that when setting or reviewing its APC policies, including the risk appetite, the CCP will seek the advice of the risk committee, which includes representatives of its clearing members and of its clients.
43. The CCP should at least establish in its policies its transparency and disclosure approach with regards to its choice of APC tool and its calibration to mitigate the potential procyclical effects of margin revisions.

**Question 2: Do you agree that CCPs should define their own APC thresholds for margin changes based on their risk appetite/tolerance? Should the RTS explicitly require that CCPs seek the advice of the risk committee, when setting or reviewing its APC policies, including defining the risk appetite?**

44. Based on the above, ESMA proposes to add a new article Article 28a of the RTS to provide further clarity on CCP policies to select, assess and review APC tools, by detailing the content and modalities of the procedures to be developed and maintained by CCPs. ESMA believes that these provisions would help support further convergence across CCP practices and hence promote a consistent implementation of measures mitigating the potential procyclical effect of margin revisions.

**Article 28a (RTS)**

**1. A CCP shall develop and maintain an internal policy setting the arrangements used to limit the procyclicality of margin requirements. These shall be documented in the CCP's procedures and be reviewed at least once a year. These shall set out at least:**

**(a) the justification and the related validation approach behind the choice of one of the options 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;**

**(b) the risk appetite of the CCP for the potential procyclical effects of its margin 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 margins and add-ons [...]**

**(d) the frequency at which it conducts the assessment with respect to the choice between the options mitigating the potential procyclical effects of margin 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 risk appetite, 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 choice between the options mitigating the potential procyclical effects of its margin revisions as provided for in Article 28(1).**

**Question 3: Do you agree with ESMA's proposal to draft a new Article 28a? What other requirements should ESMA consider introducing in relation to the CCP APC policies and procedures?**

## 4.2 Quantitative metrics to measure procyclicality

45. Guideline 1 also 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. CCPs may define their own metrics and should holistically assess the long/short-term stability, also compared to the market volatility using indicators, and the conservativeness of margins.”
46. The aim of this requirement is to ensure that APC policies are benchmarked against effective and similar metrics to facilitate comparison across APC tools. This allows for any potential procyclicality arising from significant changes to margin parameters to be identified prior their review. To provide additional granularity and avoid diverging practices, ESMA would support the inclusion of a requirement on CCPs to assess the procyclicality of margins based on quantitative metrics in the RTS.

### **Question 4: Do you agree with ESMA’s proposed amendment to require CCPs to assess margins based on quantitative metrics in the context of procyclicality?**

47. Guideline 1 further suggests specifically two types of quantitative metrics which can be used to measure the stability of margins over time. The Guideline refers to metrics to measure their short-term stability, such as margin changes over a defined short period (e.g. 1-day margin changes) or the standard deviation of such margin changes; and their long-term stability, such as margin changes calculated over a defined longer period or the long-term peak-to-trough ratio.
48. In addition to the stability of margins, 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 address an extreme but plausible market event and result in margin breaches.
49. Conversely, another relevant consideration for the CCP when setting margins is to ensure that the margin models do not ask for excessive over-collateralisation, especially during stress periods, as this could further exacerbate the liquidity drain for participants at a time when they are already under liquidity pressure.
50. In other words, when setting its APC policy, the CCP attempts to consider these three dimensions: stability, conservativeness and over-collateralisation.
51. ESMA believes that establishing a common set of dimensions (stability, conservativeness and over-collateralisation) which need to be considered when defining or reviewing the APC tools would further help to harmonize the approach of CCPs when selecting and reviewing their APC policies as this would increase their comparability and adequacy.

**Article 28a (RTS)**

***1. [...] (c) [...], especially during stress periods, including the short-term and long-term stability of margins over time and their conservativeness, as well as the potential for margins to be set at an excessive level;***

**Question 5: Do you agree with ESMA's proposal to introduce these three dimensions? Should these be mandatory or optional? How do these compare to the quantitative metrics that CCPs currently consider in practice?**

52. One final point to consider when using metrics to assess the effectiveness of APC measures is that, depending on the products cleared, one may need to perform the procyclicality assessment across different price/yield levels.

53. For example, when a CCP is calculating margin for a product whose price may range from very low levels (e.g. close to zero or even negative) up-to very high levels, this will need to be duly considered when assessing the procyclicality of its margin model and selecting the appropriate APC tool. The use of absolute / relative risk factor returns in its margin model may significantly impact its behaviour in this respect. For example, the use of historic relative (%) returns may amplify the forecasted potential future market movements (with potential procyclical effects) when applied to exceptionally high price levels or underestimate them when applied to very low levels.

**Article 28a (RTS)**

***2. When assessing the procyclicality of its margins, the CCP shall consider performing its assessment across different price and yields levels for products for which these may vary significantly.***

**Question 6: Do you agree with ESMA's proposal to include in the RTS a requirement for CCPs which clear products whose price/yield can vary significantly to perform the assessment of the procyclicality of its margin model across different price/yield levels?**

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

54. Guideline 2 requires Competent Authorities to 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."

55. Guideline 2 setting out that the CCP shall apply APC adjustments to all material risk factors is considered critical in order to allow the CCP to mitigate procyclical margin increases irrespectively of their source. In this context, material risk factors are defined

as the risk factors that could potentially lead to big-stepped changes in margins. Hence, deciding which risk factors should be considered for anti-procyclicality adjustment would be determined by the corresponding assumed procyclicality risks, which is a proportionate approach and therefore should be transposed to the RTS.

56. Furthermore, a portfolio may contain multiple products and the price of individual products may depend on single or multiple inter-dependent / common (across products) or idiosyncratic risk factors. Hence, the value and, consequently, the margin of a portfolio may depend on multiple risk factors (stemming from multiple or individual products). Therefore, it is important to define how the APC adjustments should be applied in case of multiple risk factors.
57. Guideline 2 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. This guidance provides clarity as to how the APC adjustments are to be applied when margining multiple products that are dependent on multiple risk factors and should therefore be transposed to the RTS.
58. Finally, in Guideline 2, it is determined that a CCP that chooses to apply the margin buffer for non-linear products such as options, should apply a buffer at the risk factor level instead of directly scaling up the margins by 25%. This guidance aims to ensure that the Article 28(1)(a) buffer would be risk-sensitive and would correspond to the margin increase that would be expected if the risk factor value would change by 25%, instead of just setting the buffer to be equal to a change of the margin by 25%. Where a product's payoff is not linearly dependent on a risk factor, e.g. the price of the underlying for an option, a small change in the risk factor may result to a large change in the price of the product and consequently the required margin.
59. Hence, the CCP shall always consider the impact that the risk factor change will have on the margin, including for products with non-linear dependence on risk factors. This is

#### Article 28 (RTS)

***2. The CCP shall ensure that the options set out in paragraph 1 are applied 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.***

***The CCP shall consider the impact that the risk factor change will have on the margin, including for products with non-linear dependence on risk factors.***

***The CCP may use different 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. These may be applied at product or portfolio level.***

important to make sure that any APC adjustment would be risk-sensitive and is therefore introduced as a requirement that would be applicable for all APC options.

**Question 7: Do you agree with ESMA’s proposal to introduce into the RTS the requirement on CCPs to calculate APC margin requirements at all material risk factors?**

**Question 8: Do you agree with ESMA’s proposal to consider the impact that the risk factor change will have on the margin, including for products with non-linear dependence on risk factors?**

**Question 9: Do you agree with ESMA’s proposal on how to apply the APC options for different risk factors?**

## 5 Provisions on specific APC tools

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

60. The APC option under Article 28(1)(a) (“25% Buffer”) is one of the most widely used options by CCPs, 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.

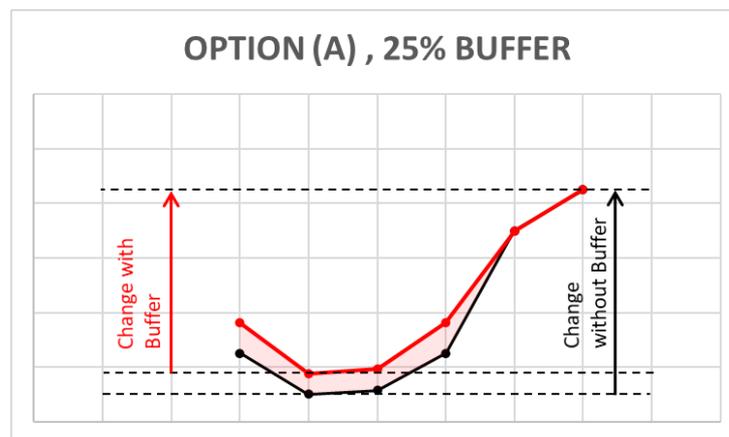


FIGURE 1: APC OPTION (A), “25% BUFFER”

61. However, if the buffer is not exhausted, the absolute margin increase will 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%. An example showcasing the effect of not exhausting the buffer during a stress period is provided in 6.3.2.1.1 - Figure 7.

#### 5.1.1 Modalities for the exhaustion of the margin buffer

62. Guideline 3 provides further guidance on the use of the 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.”*

63. ESMA has 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. For this, we assumed different potential strategies that would trigger the exhaustion following: smaller or moderate margin changes, very large margin changes or even very high margin levels. The analysis confirmed that the effectiveness of this APC option depends strongly on how efficiently and timely the CCP exhausts the buffer. Examples demonstrating the sensitivity of the effectiveness of this tool to the modalities of the exhaustion of the buffer are presented in 6.3.2.1.1 - Figure 8 to Figure 13.
64. ESMA has 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. It is therefore considered inappropriate to set prescriptive regulatory requirements on the timing and way to exhaust/replenish the margin buffer.
65. Hence, ESMA proposes to introduce in Article 28(1)(a) of the RTS a requirement that is similar to the existing Guideline 3, requiring the CCP to 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. 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 a poor use of the margin buffer may reduce the effectiveness of the tool or even exacerbate the procyclical effect of the margin increase. Hence, the CCP is provided with some flexibility not to follow the predefined thresholds if deemed necessary. However, this should be subject to appropriate governance arrangements set in the CCP's APC policy.

### Article 28 (RTS)

1. When a CCP selects and revises the parameters of the margin model in order to better reflect current market conditions, it shall take into account any potential procyclical effects of such revision. In doing so, the CCP shall select one of the following options:
  - a. [...] The CCP shall develop and maintain documented policies and procedures setting out the circumstances under which the buffer could be temporarily exhausted or subsequently replenished. These should include metrics and thresholds to determine when margin requirements are rising significantly and which may warrant the exhaustion of the margin buffer, and the conditions for replenishment of the buffer following its exhaustion. These should specify the pace and extent to which the buffer should be exhausted, partially or totally. These should also include 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.

**Question 10: Do you agree with ESMA's proposal that CCPs using the APC tool under Article 28(1)(a) should develop policies and procedures detailing the use of the buffer and its replenishment as included in the draft RTS test? Are there other items that the procedures should consider in the RTS?**

**Question 11: Do you agree that CCPs should set predefined thresholds but also be granted a degree of discretion when triggering the exhaustion of the margin buffer subject to appropriate governance arrangements?**

#### 5.1.2 Size of the margin buffer

66. The sizing of the margin buffer constitutes a complex trade-off for the CCP between its impact on margin stability, conservativeness, and the potential for the buffer to lead to overcollateralization leading to excessive cost, which can also drain liquidity especially during stress conditions. It should be noted that, while an increased buffer should overall help to reduce big-step margin changes, it could also accentuate the procyclicality of margin increases if not used or used at the wrong time.
67. ESMA simulated the performance of different buffer levels for multiple simple directional portfolios across asset classes in order to assess whether the RTS should set the buffer at a higher/lower level or even differentiate per asset class. The results of this simulation are presented in 6.3.2.1.1 - Figure 14 to Figure 16. Similarly to what was explained above, the results are very sensitive to the exhaustion strategy used. Therefore, for the purpose of this analysis, we have assumed that the CCP would have selected what would have (on an ex-post basis) proven the best exhaustion strategy (out of the different strategies tested). Hence, this particular sensitivity analysis cannot be used to directly draw conclusions on the real-world effectiveness of the tool.

68. Having these limitations in mind, 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. However, even in this case, it seems 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 will be even stronger for an increased buffer.
69. When it comes to different asset classes, different levels of buffers would be needed in some cases to achieve the same stability outcome in this analysis. However, having all the limitations in mind, there was no evidence that this is a result of inherent properties of the asset classes which could be used to draw general conclusions. The results would strongly depend on the choice of specific assets within asset classes and their performance in recent history. The fact that an asset experienced specific stress events in recent history does not mean that other assets in other (or same) asset class could not experience similar levels of stress in the future. Hence, there was no evidence that would disqualify the existing choice of 25% as an adequate minimum size of the buffer. Overall, this approach seems to provide an acceptable trade-off between impact on stability, conservativeness, and cost.
70. Based on its analysis, ESMA believes 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.
71. However, ESMA notes 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. The CCP should justify its initial choice of the size of the buffer and regularly check its appropriateness. This is reflected in the proposed draft RTS as follows.

#### Article 28 (RTS)

1. [...] In doing so, the CCP shall employ at least one of the following options:
  - (a) applying 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. ***The CCP shall assess whether a higher buffer would be needed considering its own products and margin model. The CCP shall justify its initial choice of the size of the buffer and regularly assess its appropriateness. [...]***

**Question 12: Do you agree with ESMA’s proposal to set the minimum buffer to 25% while requiring CCPs to assess if a higher buffer would be needed and justify / regularly check the appropriateness of their choice?**

**Question 13: Are there cases where ESMA’s proposal to modify Article 28(1)(a) RTS would present difficulties for CCPs in practice?**

## 5.2 25 % weight to stressed observations under Article 28(1)(b) of the RTS

72. 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. 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.

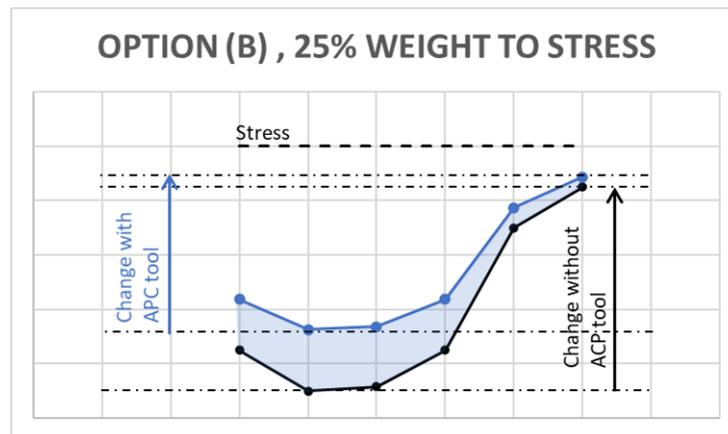


FIGURE 2: APC OPTION (B), "25% WEIGHT TO STRESS"

73. The effectiveness of this tool relies heavily on the identification of the stressed observations and their incorporation in the margin requirement.

74. However, based on the observed divergent implementation of the existing Article 28(1)(b) RTS, ESMA believes it is necessary to provide a greater level of detail to ensure an effective and convergent implementation of this tool across different CCPs. The current RTS does not indicate the expected length of the time horizon (lookback) within which one needs to look for stressed observations. The reference to Article 26 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 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.

75. Different alternatives have been identified and analysed. A quantitative analysis conducted by ESMA staff based on the simulation of the performance of each tool using a long historical time series for products from different asset classes is presented as part of the cost-benefit analysis in Annex III. The conclusions drawn from this analysis are used to support the choices presented below.

76. The calibration is discussed around three aspects, i.e. (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.

### 5.2.1 How to identify Stressed Observations

#### Article 28 (RTS)

1. [...]. In doing so, the CCP shall employ at least one of the following options:

[...] (b) **identifying and reviewing at least annually a set of extreme market movements that include past observations from the most volatile periods and from historical scenarios identified under Article 30(2)(a). The CCP shall consider also including potential future scenarios identified under Article 30(2)(b). The CCP shall ensure that this set includes an adequate number of extreme market movements for all margined products, including the ones that could expose it to greatest financial risk. The CCP shall consider reviewing the set of extreme market movements more frequently taking into account the procyclical effects from such revision. [...]**

77. The APC tool provided for in Article 28(1)(b) RTS is expected to stop margin from going too low during calm periods as the 'stress' margin will be calculated using extreme market movements included in the stress scenarios already identified by the CCP for the purpose of its daily stress tests. This 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.

78. According to Article 30(2)(a) of the RTS, the CCP shall 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, while the potential use of hypothetical scenarios discussed below should help mitigate any prudential concerns that might be raised as a result of this.

79. Furthermore, according to Article 30(2)(a), if a CCP decides that recurrence of a historical instance of large price movements is not plausible, it shall justify its omission from the framework to the Competent Authority. This provision allows to consistently and based on existing procedures, involving the Competent Authority, cater for cases where a historical observation would need to be removed as it is deemed by the CCP as implausible.

**Question 14: Do you agree that CCPs should consider the extreme market movements from the historical stress scenarios identified under Article 30 of the RTS?**

80. The inclusion of extreme market movements implied by the potential future scenarios identified under Article 30(2)(b) will prove useful if plausible stress events have not been observed before. This will be the case for 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. One needs to make clear that the fact that such extreme events would feed into the margin calculation does not mean that the margin needs to cover the worst of the relevant losses. The margin is calibrated to cover the exposures up to a minimum confidence level specified in the regulation (i.e. 99% or 99.5%). 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.
81. It is acknowledged that including extreme market movements implied by hypothetical stress scenarios in the margin calculation is not currently a practice that is used by CCPs as the margin is based on (relatively recent) historical observations. 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. This may be straightforward for cases where the scenarios result from statistical modelling of prices, but may be less so where the potential future scenarios are drawing on more qualitative assessments of potential market conditions<sup>7</sup>.
82. Moreover, the usefulness of including such scenarios will depend on the properties of the cleared products. In the simulation performed (6.3.2.1.2 – Figure 20 to Figure 22), we saw that the inclusion of hypothetical scenarios increased the margin and reduced the magnitude of the short-term margin changes and the margin shortfalls. Of course, this is strongly dependent on the severity of the hypothetical scenarios if compared to the severity of the historical scenarios. 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 opposite effect can also be the case. The inclusion of multiple hypothetical scenarios that are not always relevant across all products can somehow mute the impact from severe historical stress scenarios.
83. Hence, ESMA has included in the suggested draft RTS a provision for the CCP to include past observations from the most volatile periods, and from historical scenarios identified under Article 30(2)(a). The CCP shall consider also including potential future scenarios identified under Article 30(2)(b).

**Question 15: Do you agree with ESMA's proposal that CCPs should also consider including the extreme market movements from the potential future stress scenarios identified under Article 30(2)(b)?**

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<sup>7</sup> An example of such a case would be a scenario that always assumes the worst loss independently of the relative direction (i.e. long/short) of two positions in order to model a potential correlation breakdown.

84. A residual risk with this tool could be that the stress scenarios would not have enough stress observations to make sure that the 'stress' margin is adequately higher than the unadjusted margin. That would be the case if the margin lookback includes already the 'stress' scenarios or if the stress observations that are relevant for a margined product are not included or are too few to make a difference.
85. It was considered including a restriction with regard to the 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. However, it would be difficult to define any such hard thresholds considering that such requirements would be imposed to CCPs having very diverse sets of margined products, models and calibrations. Therefore, the proposed amendment allows more flexibility to CCPs to select this set of extreme observations, while requiring them to ensure that it includes an adequate number of severe observations for all margined products. The CCPs will be required to evidence and review on a regular basis the effectiveness of the chosen APC tool.
86. Hence in the draft RTS, while it is suggested to require CCPs to include past observations from the most volatile periods and the Article 30 historical scenarios, CCPs shall also ensure that this set includes an adequate number of extreme market movements for all margined products, including the ones that could expose it to the greatest financial risks.

**Question 16: Do you agree to require that CCPs ensure the set of extreme market movements includes an adequate number of extreme market movements for all margined products, including the ones that could expose it to the greatest financial risks?**

87. Any effective APC tool should allow the absorption of sudden margin increases. On the one hand, the stress scenarios should reflect the most relevant extreme market movements. However, on the other hand, it could be argued that the consideration of the Article 30 historical scenarios could instead, as a side effect, increase procyclical margin changes at the time these stress scenarios are updated. This could be the case if a newly added stress event in the set of stress scenarios would be more severe than what has been experienced in the past. Therefore, it was considered to exclude the most recent stress observations (e.g. last 30 days) aimed at avoiding a spike in the 'stress' margin during a stress period that would not allow the automatic exhaustion of the buffer.
88. However, 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.
89. Furthermore, it would typically take CCPs some time to identify and incorporate any new stress events in their set of stress scenarios. According to RTS Article 31, these shall be reviewed by the CCP, in consultation with the risk committee, at least annually and more frequently 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. Material changes to the framework need to be reported to the board.

90. Moreover, CCPs would not be required to review the set of extreme market movements used for the purpose of the APC tool immediately, but at least annually. Hence, we have not included in the suggested draft RTS text any specific restrictions on when the CCP should include new stress observations. Instead, we have added a provision that the CCP shall consider reviewing the set of extreme market movements more frequently taking into account the procyclical effects from such revision.

91. Nonetheless, these new 'stress' observations are expected to be included in the Article 25 margin lookback period and will therefore affect the unadjusted margin immediately. Consequently, under-collateralisation will be avoided during stress periods: the unadjusted margin will increase, and the 'stress' margin will remain stable, thus allowing the automatic exhaustion of the buffer.

**Question 217: Do you agree with ESMA's proposal not to include a specific time restriction on when CCPs should add new stress observations in the set of extreme market movements used for the purpose of the APC tool, but instead add a provision to consider reviewing more frequently taking into account the procyclical effects from such revision?**

#### 5.2.2 How to calculate a stress margin using the stress observations

##### Article 28 (RTS)

1. [...]. In doing so, the CCP shall employ at least one of the following options:

[...] (b) [...] ***The CCP shall calculate a stress margin using the same model and parameters 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. The CCP shall recompute the stress margin at least daily and shall avoid using scaling techniques that can affect the severity of observations or calculated stress margin.***  
[...]

92. The identified extreme market movements will be used to calculate a stress margin amount. The fact that extreme observations will be used for the margin calculation does not mean that the margin would need to cover the maximum losses. The aim of this calculation is to estimate what the margin could look like in times of stress. For this reason, the calculation of the stress margin should use stress observations and consider the same model and remaining parameters (i.e. including confidence level, liquidation horizon and portfolio margining) used for the unadjusted margin calculation.

93. The margin is calibrated to cover the exposures up to the confidence level specified in the regulation, i.e. 99% or 99.5% or higher subject to further conditions provided in Article 24 the RTS. The same confidence level should apply to the stress margin calculation. It is thus expected that the CCP would calculate the losses implied by the extreme market movements and set the stress margin at a level that would cover the worse 1% or 0.5% of those losses. The inclusion of a wide range of extreme market movements would help to proxy a stress margin amount for a diverse set of portfolios / positions.

94. 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.
95. A CCP can use a liquidation horizon for its stress testing scenarios that is longer than the one used for margin calculation in accordance with Article 26 in order to model restricted levels of liquidity. This means that the extreme market movements identified for the stress testing framework would be generally more severe than what should be used for margin calculation. It is reminded that the target is not to make the stress margin as conservative as possible, but to make sure that the calculated stress margin amount would proxy what the margin would look like in times of stress. For this reason, the CCP should use extreme market movements that are based on the margin liquidation period in line with Article 26 requirements.

**Question 318: Do you agree with ESMA's proposal that CCPs should calculate the stress margin using the same model and parameters in compliance with Articles 24, 26 and 27, except for the time horizon under Article 25?**

**Question 419: Do you agree that for the purpose of calculating the stress margin to be used for the calibration of the APC tool, CCPs should recompute the stress margin at least daily and shall avoid using scaling techniques that can affect the severity of observations or calculated stressed margin?**

### 5.2.3 How to integrate the stress margin in the final margin amount

#### Article 28 (RTS)

1. [...]. In doing so, the CCP shall employ at least one of the following options:

[...] (b) [...] ***The CCP shall assign 75% weight to the margin calculated in accordance with Articles 24, 25, 26 and 27 (i.e. 'unadjusted margin') and 25% weight to the stress margin. If the stress margin is smaller, the CCP shall apply a 100% weight to the unadjusted margin and 0% to the stress margin. During a period where calculated margin requirements are rising significantly, the CCP may temporarily increase the weight that is applied to the unadjusted margin and equally reduce the weight applied to the stress margin.***

***The CCP shall develop and maintain documented policies and procedures setting out the circumstances under which the weight that is applied to the unadjusted margin could be temporarily increased. These should include metrics and thresholds to determine when margin requirements are rising significantly and which may warrant the temporary increase of the weight, and the conditions for its subsequent reduction. These should also include the governance arrangements for the approvals for the increase and reduction of the weight, including cases where the CCP would not follow the predefined thresholds.***

96. 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<sup>8</sup>.
97. As the Unadjusted Margin approaches the Stress Margin, this implied buffer gets gradually and automatically eroded. At each step-change in margin requirements, the margin call is 25% lower than the margin call that would have been required if there had been no anti-procyclical adjustment<sup>9</sup>. A prerequisite for this is that the stress margin amount will not increase during a stress event. The provision to take into account the procyclical effects when considering reviewing the set of extreme market movements aims to avoid including very recent events where this can fuel procyclicality. Hence, it aims to make sure that the stress margin will not follow the volatility increase during the crisis. The unadjusted margin will increase, and the stress margin will remain stable leading to an exhaustion of the buffer built during the low volatility period. This could lead to a case where the unadjusted margin is higher than the stress margin. This requires further clarification that, where the 'stress' margin is lower than the unadjusted margin, the final margin amount should be equal to the unadjusted margin. Assigning 25% weight to this lower stress margin would have resulted in an under-collateralisation. The objective of the regulation is not to make margins stable at any cost, and the CCP is expected to control possible procyclical effects to the extent that its soundness and financial security are not negatively affected.
98. A drawback of the existing APC tool under Article 28(1)(b) 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. It is set that the CCP shall assign at least 25 % weight to stressed observations. Hence, the buffer will only be automatically fully exhausted when the margin reaches its stress level. This property removes the uncertainty of whether and when to exhaust the buffer but restricts the tools available to the CCP to cope with a very sudden increase of margin.
99. 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. This is meant to allow the CCP to alleviate the effects from rapid and sharp margin increases, that would not bring margin to their stress level and would thus not lead to an automatic exhaustion of the buffer (see example<sup>10</sup>). The impact of including this provision was also assessed using the simulation results (6.3.2.1.2 – Figure 17 to Figure 19)

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<sup>8</sup>  $\text{Margin}^{\text{post-APC}} = 75\% \text{Margin}^{\text{pre-APC}} + 25\% \text{Margin}^{\text{ST}} = \text{Margin}^{\text{pre-APC}} + 25\% (\text{Margin}^{\text{ST}} - \text{Margin}^{\text{pre-APC}})$

<sup>9</sup>  $\text{Margin}^{\text{post-APC}, T} = 75\% \text{Margin}^{\text{pre-APC}, T} + 25\% \text{Margin}^{\text{ST}, T}$   
 $\text{Margin}^{\text{post-APC}, (T+1)} = 75\% \text{Margin}^{\text{pre-APC}, (T+1)} + 25\% \text{Margin}^{\text{ST}, (T+1)}$   
 $\Rightarrow \Delta \text{Margin}^{\text{post-APC}} = \text{Margin}^{\text{post-APC}, (T+1)} - \text{Margin}^{\text{post-APC}, T} = 75\% \Delta \text{Margin}^{\text{pre-APC}}$ , if  $\text{Margin}^{\text{ST}, T} = \text{Margin}^{\text{ST}, (T+1)}$

<sup>10</sup> e.g.

100. As it can be seen in the stylized example, one needs to be careful because if the CCP has decided to exhaust the buffer, it will have little remaining protection. However, 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. Nonetheless, the CCP should have a documented policy setting out the circumstances under which the weight could be temporarily reduced, including metrics & thresholds to determine when margin is rising significantly, conditions for replenishment and related governance arrangements.

101. It is not further prescribed when and how the CCP shall reduce this weight. There is no indication that there is a “weight-reduction” strategy that is always optimal. Hence, the CCP should not be obliged to have hard thresholds. The CCP shall have predefined thresholds, but also the discretion not to follow those if deemed necessary. However, this should be subject to appropriate governance arrangements.

102. Finally, we have not introduced any restriction on the length of the period during which the weight to the stress component may be reduced. 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.

**Question 20: Do you agree with ESMA’s proposal to include the provision to allow CCPs to temporarily increase the weight that is applied to the unadjusted margin and equally reduce the weight applied to the stress margin? Should there be a time limit on this provision?**

**Question 21: Are there cases where ESMA’s proposal to modify Article 28(1)(b) RTS would present difficulties for CCPs in practice?**

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

103. The APC option under Article 28(1)(c) (“margin floor”) introduces a floor aiming to not allow the margin to go too low. The floor is set by ensuring that margin requirements are

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At Time (T) without APC buffer  
 $\text{Margin}^{\text{pre-APC}, (T)} = 5$

At Time (T) with an APC buffer of 25%  
 $\text{Margin}^{\text{pre-APC}, (T)} = 5$  ;  $\text{Margin}^{\text{ST}, (T)} = 15$  ; Weight to stress = 25%  
 => Final Margin at time (T) = 7.50

At time (T+1) with APC buffer, and no change of weight, assuming and increase of unadjusted margin from 5 to 8 (+60%)  
 $\text{Margin}^{\text{pre-APC}, (T+1)} = 8$ ,  $\text{Margin}^{\text{ST}, (T+1)} = 15$ , Weight to stress = 25%  
 => Final Margin at time (T+1) = 9.75, i.e. increase of 2.25 (+30%)

At time (T+1) with APC buffer, and change of weight to 0%, assuming and increase of unadjusted margin from 5 to 8 (+60%)  
 $\text{Margin}^{\text{pre-APC}, (T+1)} = 8$ ,  $\text{Margin}^{\text{ST}, (T+1)} = 15$ , Weight to stress = 0%  
 => Final Margin at time (T+1) = 8.00, i.e. increase of 0.50 (+7%)

At time (T+1) if the CCP would have no APC protection, assuming and increase of unadjusted margin from 5 to 8 (+60%)  
 $\text{Margin}^{\text{pre-APC}, (T+1)} = 8$   
 => Final Margin at time (T+1) = 8.00, i.e. increase of 3.00 (+60%)

not lower than those that would be calculated using volatility estimated over a 10-year historical lookback period.

104. 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.

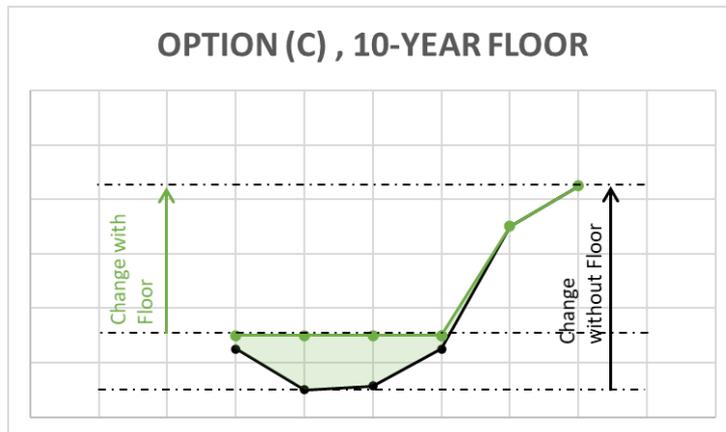


FIGURE 3: APC OPTION (C), “MARGIN FLOOR”

105. A potential weakness of this APC option is that it will not provide any anti-procyclical protection as soon as the margin is already above the defined floor. Hence, the effectiveness of this tool is reduced if the floor itself is set at a relatively low level.

### 5.3.1 Inclusion of stress periods in the 10-year look back period

106. For the margin floor to remain effective in mitigating procyclicality, the long lookback period used for the calculation of the margin floor should include stress periods. 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. This floor will only be effective in mitigating procyclical margin increases following a rapid reversion of volatility from its lowest levels to the long term mean or higher. It will not help when the margin increases from above or close to its long-term average.

107. It cannot be guaranteed that a 10-year lookback period will include the most relevant stress periods for margined products. For example, a margin floor using the most recent 10 years of data would not have included the 2008 (sub-primes) stress observations during the Covid-19 stress event (March 2020), as these would have fallen out of the lookback period during 2018.

108. 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.

109. Hence, ESMA has explored whether it would be appropriate to require the CCPs to use even longer lookback periods in an effort to make sure that stress observations that are

relevant for cleared products are adequately reflected. The benefit of using a very long lookback period is that it will increase the probability that all relevant stress events will be included. Following the example provided above, the CCP could have used during the COVID-19 stress events a 13-year lookback that would have allowed it to consider the 2008 (sub-primes) stress observations. However, 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<sup>11</sup>. This would reduce the effectiveness of including these stress events in the lookback period of the floor. The result of this is that the margin using a very long lookback may be lower than the margin using a shorter lookback despite the fact that it may include more stress observations.

110. We have also analysed the effect of enhancing the 10-year lookback by appending additional stress observations, i.e. beyond what is already included in the 10-year lookback period. In order to simulate this scenario, we have considered different methods that could be used to select these stress observations. For the purpose of this analysis, we have considered both appending additional periods of stress (e.g. adding three stress periods, each including a continuous set of historical observations, of a total length of approximately 1 year) and also appending individual historical extreme market movements mechanically selected across the entire available history (similar to what was done for the “25% weight to stress” analysis). The results of this analysis are presented in 6.3.2.1.3 – Figure 23 to Figure 25. As expected, both “enhanced floor” calibrations resulted to higher margins compared to the “10-year floor” model. 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.
111. Hence, ESMA proposes 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. 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”. This will also ensure that the CCP will consider stress scenarios identified under Article 30 for the purpose of its stress tests and make use of the relevant existing processes.
112. It is noted that the inclusion of the most extreme observations within a very long lookback period (10-years) is not expected to result in a floor that is close to what a stress margin would look like. The floor level will not be set by the most extreme observations but at a percentile defined according to Article 24. Finally, we do not suggest setting a minimum number or proportion of stressed observations. Hence, a degree of flexibility is left to the CCP to select the observations while being required to make sure that this set

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<sup>11</sup> For example, the 99% VaR using a 20-year lookback is close to the 50th worst observation while the 99% VaR using a 10-year lookback is close to the 25th worst observation

includes an adequate number of extreme market movements for all margined products, including the ones that could expose it to the greatest financial risks.

113. In addition, in order to ensure the effectiveness of the floor, ESMA proposes to introduce 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.
114. We also propose making clearer that the “10-year plus stress” margin should be a floor and not the baseline margin model. In fact, a margin that would simply be based on a very long lookback (even including stress observations) would be very unresponsive, if not combined with a model having an actual or effective<sup>12</sup> shorter lookback period.
115. Moreover, Guideline 4 includes a recommendation that any CCP using a margin floor outlined under Article 28(1)(c) should avoid using modelling procedures to reduce the effectiveness of using a 10-year historical lookback period for the computation of the margin floor. This provision was meant to not allow CCPs to apply varying weights to different observations when calculating the floor and thus altering the effective length of the lookback period. A provision to address this risk is also included in the proposed draft RTS and it further clarifies that the CCP should not use such techniques that can affect the severity of observations, extreme market movements or calculated floor margin.
116. Finally, ESMA proposes not to include in the revised draft RTS the derogation that is currently 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. In fact, ESMA does not believe that there is a reason to calculate the floor less frequently. In order to make sure that the floor will be effective under different conditions, we have included in the draft RTS a requirement for the CCP to recalibrate and recompute it at the same frequency that it recalibrates and recomputes its margin requirements. 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.
117. The text including the proposed changes under Article 28(1) (c) of the RTS is set out below.

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<sup>12</sup> e.g. a model utilising exponentially-weighted-moving-average (EWMA) volatility filtering which would assign increased weight to recent observations.

**Article 28 (RTS)**

1. [...] In doing so, the CCP shall employ at least one of the following options: [...]

(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.

*The set of extreme market movements is identified and reviewed at least annually to include past observations from the most volatile periods and from historical scenarios identified under Article 30(2)(a). The CCP shall consider also including potential future scenarios identified under Article 30(2)(b). The CCP shall ensure that this set includes an adequate number of extreme market movements for all margined products, including the ones that could expose it to greatest financial risk. The CCP shall consider reviewing the set of extreme market movements more frequently taking into account the procyclical effects from such revision.*

*When calculating the margin floor, the CCP shall avoid using scaling techniques that can affect the severity of observations, extreme market movements or calculated floor margin.*

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

**Question 22: Do you agree with ESMA's proposal that the margin floor should include stress market movements in addition to the 10-year lookback period? Do you agree with the methodology used to identify these extreme market movements?**

**Question 53: Do you agree that the margin floor should be calculated in compliance with Articles 24, 26 and 27 of the RTS?**

**Question 624: Do you agree that the margin floor should be recomputed at the same frequency than the baseline margin requirements?**

**Question 25: Do you agree that, when calculating the margin floor, CCPs shall avoid using scaling techniques that can affect the severity of observations, extreme market movements or calculated floor margin?**

**Question 26: Are there cases where ESMA's proposal to modify Article 28(1)(c) RTS would present difficulties for CCPs in practice?**

## 6 Annexes

### 6.1 Annex I - Summary of questions

#### Procyclicality of Margins

Question 1: Do you agree that CCPs should be able to explain and justify their APC tool choices?

Question 2: Do you agree that CCPs should define their own APC thresholds for margin changes based on their risk appetite/tolerance? Should the RTS explicitly require that CCPs seek the advice of the risk committee, when setting or reviewing its APC policies, including defining the risk appetite?

Question 3: Do you agree with ESMA's proposal to draft a new Article 28a? What other requirements should ESMA consider introducing in relation to the CCP APC policies and procedures?

Question 4: Do you agree with ESMA's proposed amendment to require CCPs to assess margins based on quantitative metrics in the context of procyclicality?

Question 5: Do you agree with ESMA's proposal to introduce these three dimensions? Should these be mandatory or optional? How do these compare to the quantitative metrics that CCPs currently consider in practice?

Question 6: Do you agree with ESMA's proposal to include in the RTS a requirement for CCPs which clear products whose price/yield can vary significantly to perform the assessment of the procyclicality of its margin model across different price/yield levels?

Question 7: Do you agree with ESMA's proposal to introduce into the RTS the requirement on CCPs to calculate APC margin requirements at all material risk factors?

Question 8: Do you agree with ESMA's proposal to consider the impact that the risk factor change will have on the margin, including for products with non-linear dependence on risk factors?

Question 9: Do you agree with ESMA's proposal on how to apply the APC options for different risk factors?

Question 10: Do you agree with ESMA's proposal that CCPs using the APC tool under Article 28(1)(a) should develop policies and procedures detailing the use of the buffer and its replenishment as included in the draft RTS test? Are there other items that the procedures should consider in the RTS?

Question 11: Do you agree that CCPs should set predefined thresholds but also be granted a degree of discretion when triggering the exhaustion of the margin buffer subject to appropriate governance arrangements?

Question 12: Do you agree with ESMA's proposal to set the minimum buffer to 25% while requiring CCPs to assess if a higher buffer would be needed and justify / regularly check the appropriateness of their choice?

Question 13: Are there cases where ESMA's proposal to modify Article 28(1)(a) RTS would present difficulties for CCPs in practice?

Question 14: Do you agree that CCPs should consider the extreme market movements from the historical stress scenarios identified under Article 30 of the RTS?

Question 15: Do you agree with ESMA's proposal that CCPs should also consider including the extreme market movements from the potential future stress scenarios identified under Article 30(2)(b)?

Question 16: Do you agree to require that CCPs ensure the set of extreme market movements includes an adequate number of extreme market movements for all margined products, including the ones that could expose it to the greatest financial risks?

Question 17: Do you agree with ESMA's proposal not to include a specific time restriction on when CCPs should add new stress observations in the set of extreme market movements used for the purpose of the APC tool, but instead add a provision to consider reviewing more frequently taking into account the procyclical effects from such revision?

Question 18: Do you agree with ESMA's proposal that CCPs should calculate the stress margin using the same model and parameters in compliance with Articles 24, 26 and 27, except for the time horizon under Article 25?

Question 19: Do you agree that for the purpose of calculating the stress margin to be used for the calibration of the APC tool, CCPs should recompute the stress margin at least daily and shall avoid using scaling techniques that can affect the severity of observations or calculated stressed margin?

Question 20: Do you agree with ESMA's proposal to include the provision to allow CCPs to temporarily increase the weight that is applied to the unadjusted margin and equally reduce the weight applied to the stress margin? Should there be a time limit on this provision?

Question 21: Are there cases where ESMA's proposal to modify Article 28(1)(b) RTS would present difficulties for CCPs in practice?

Question 22: Do you agree with ESMA's proposal that the margin floor should include stress market movements in addition to the 10-year lookback period? Do you agree with the methodology used to identify these extreme market movements?

Question 23: Do you agree that the margin floor should be calculated in compliance with Articles 24, 26 and 27 of the RTS?

Question 24: Do you agree that the margin floor should be recomputed at the same frequency than the baseline margin requirements?

Question 25: Do you agree that, when calculating the margin floor, CCPs shall avoid using scaling techniques that can affect the severity of observations, extreme market movements or calculated floor margin?

Question 26: Are there cases where ESMA's proposal to modify Article 28(1)(c) RTS would present difficulties for CCPs in practice?

## **6.2 Annex II - Legislative mandate to develop technical standards**

### **Procyclicality of Margins**

Article 41(5) of EMIR states:

“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.

ESMA shall submit those draft regulatory technical standards to the Commission by 30 September 2012.

Power is delegated to the Commission to adopt the regulatory technical standards referred to in the first subparagraph in accordance with Articles 10 to 14 of Regulation (EU) No 1095/2010.”

## 6.3 Annex III - Cost-benefit analysis

### 6.3.1 Introduction

118. This consultation paper sets out a proposal for the amendment of the RTS under Article 41 of the EMIR Regulation with regards to, respectively, the policies and procedures used to address procyclicality of margin requirements and the calibration of the specific APC measures.

119. We have discussed the benefits and possible costs of the different options identified to meet key policy objectives under various scenarios in Sections 4 and 5. This is complemented with a quantitative analysis and the conclusions drawn from this analysis will be used to inform the relevant choices.

120. However, we would welcome any additional input from CCPs or other market participants on the quantitative impact of the proposals.

121. Following the consultation process and taking into account the feedback received from stakeholders, ESMA will prepare a full Cost-Benefit Analysis when finalising its RTS.

### 6.3.2 Simulation of the performance of different anti-procyclical tools

122. ESMA staff conducted a quantitative analysis based on the simulation of the performance of different anti-procyclicality tools. A long historical time series was used for risk factors from six different asset classes, i.e. Equities, Rates, Bonds, Metals, FX and Energy.

123. For each asset class we built two portfolios, one with a long position and one with a short position on a common benchmark risk factor. For example, for Equities we 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 we considered 12 portfolios.

124. For each portfolio we simulated the daily margin requirement over a long period using different anti-procyclical (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>13</sup>.

125. The purpose is to compare the effectiveness and efficiency of different anti-procyclical (APC) tools.

## Identifying stress observations

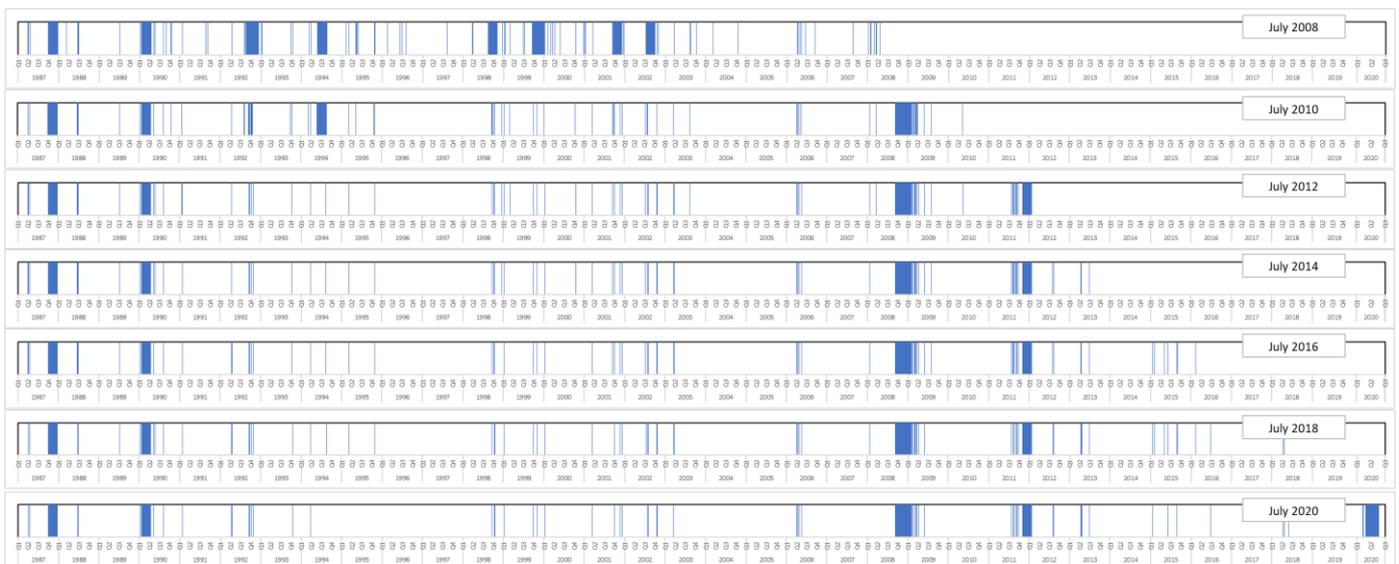
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<sup>13</sup> It is acknowledged that this model is very simple and there could be other baseline models with better anti-procyclical behaviour. However, the purpose of this analysis is to compare the APC adjustments. Hence, using a model that shows a procyclical behaviour is useful to highlight the differences between the considered APC adjustments.

126. In order to simulate the performance of some APC options, we needed to identify and include extreme market movements corresponding to stress scenarios. For this purpose, we devised an algorithm for the identification of relevant historical and hypothetical stress moves. We 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 1/1/1987 up to one month before each review date (to model the lag between the stress event and including it in the stress scenarios).

127. For the identification of the historical scenarios on each review date, and for each one of approximately 30 risk factors, we 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, we considered the 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.

128. This is illustrated in the following chart where one can see an example of the dates selected for different review periods.



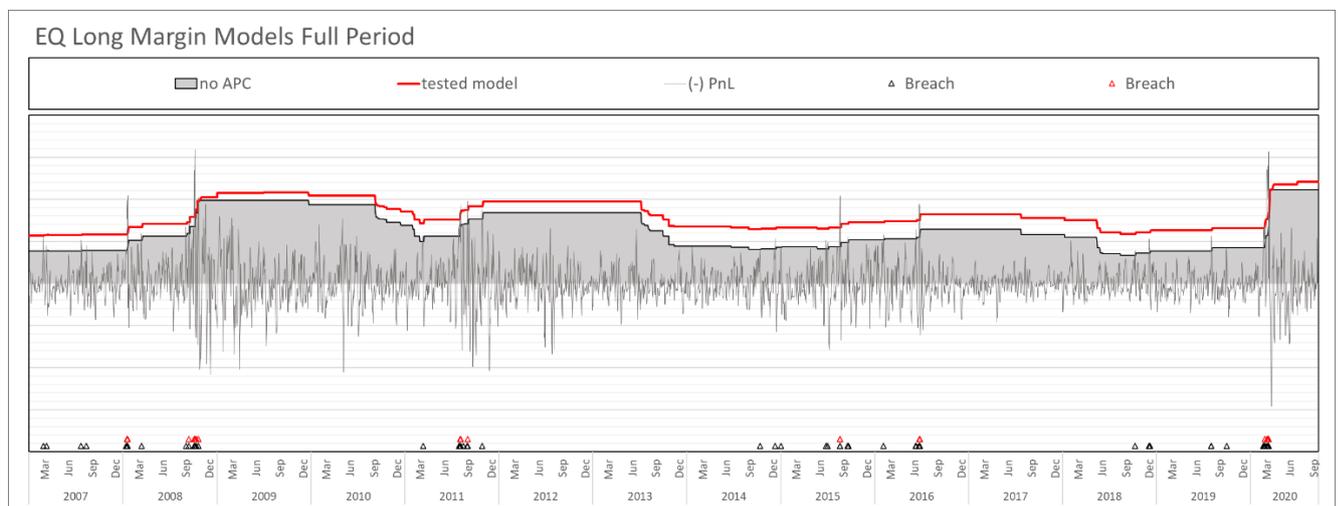
**FIGURE 4: EXAMPLE OF SELECTING HISTORICAL STRESS DATES FOR DIFFERENT REVIEW PERIODS**

129. In order to complement the set of extreme market movements with hypothetical stress scenarios, where applicable, we again used a simple algorithm. We 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, we 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 we 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.

130. The set of historical and hypothetical stressed observations produced with the above algorithm was used to build the set of extreme market movements where we 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, we 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, we also used a rolling standard deviation metric to identify the most relevant periods.

## Presenting simulated models

131. Each simulation can first be observed through a backtesting chart where model results are compared to the 3-day actual exposure over a certain period of time for a dedicated portfolio. Every model breach (i.e. when the amount of exposure exceeds the margin amount) is highlighted with a same colour triangle next to the time axis.



**FIGURE 5: EXAMPLE OF PRESENTING A SIMULATED OPTION OVER THE FULL PERIOD**

132. The comparison is 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 is measured using the average (of top-3) and maximum 3-day margin increase over the considered period. For each model and for each day we calculate the margin change over the previous 3 days and then, we calculate the average of top-3 increases<sup>14</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. We are then comparing 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%.

<sup>14</sup> adjusted to account for overlapping 3-day increases.

133. The conservativeness is measured using the average (of top-3) and the maximum margin shortfall over the period. For each model and each day, we compare 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. We are again comparing the % shortfalls of different models over margin. For example, if the margin shortfall under a tested model is 100% and under the “no-APC model” is 150%, the impact is -33%.

134. Finally, for each model we also record 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 we use 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%.

135. The comparison is also presented using the following radar chart shown here for illustration purposes. In order to compare the different APC tools using a common base, we always show the “no APC” case using a dashed (black) line. In this example, 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.

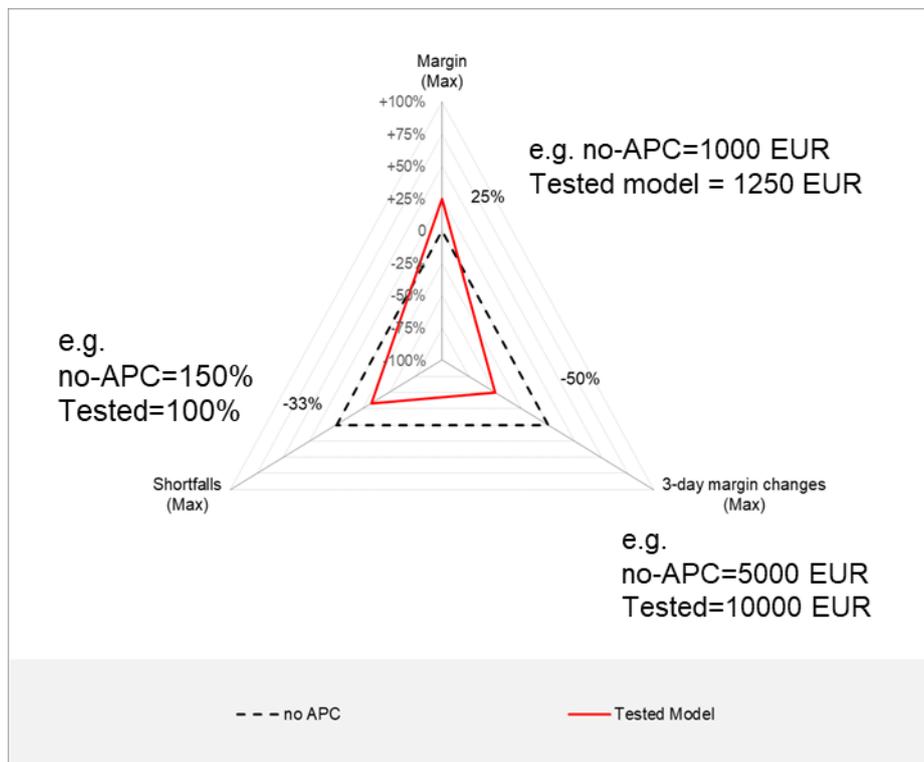
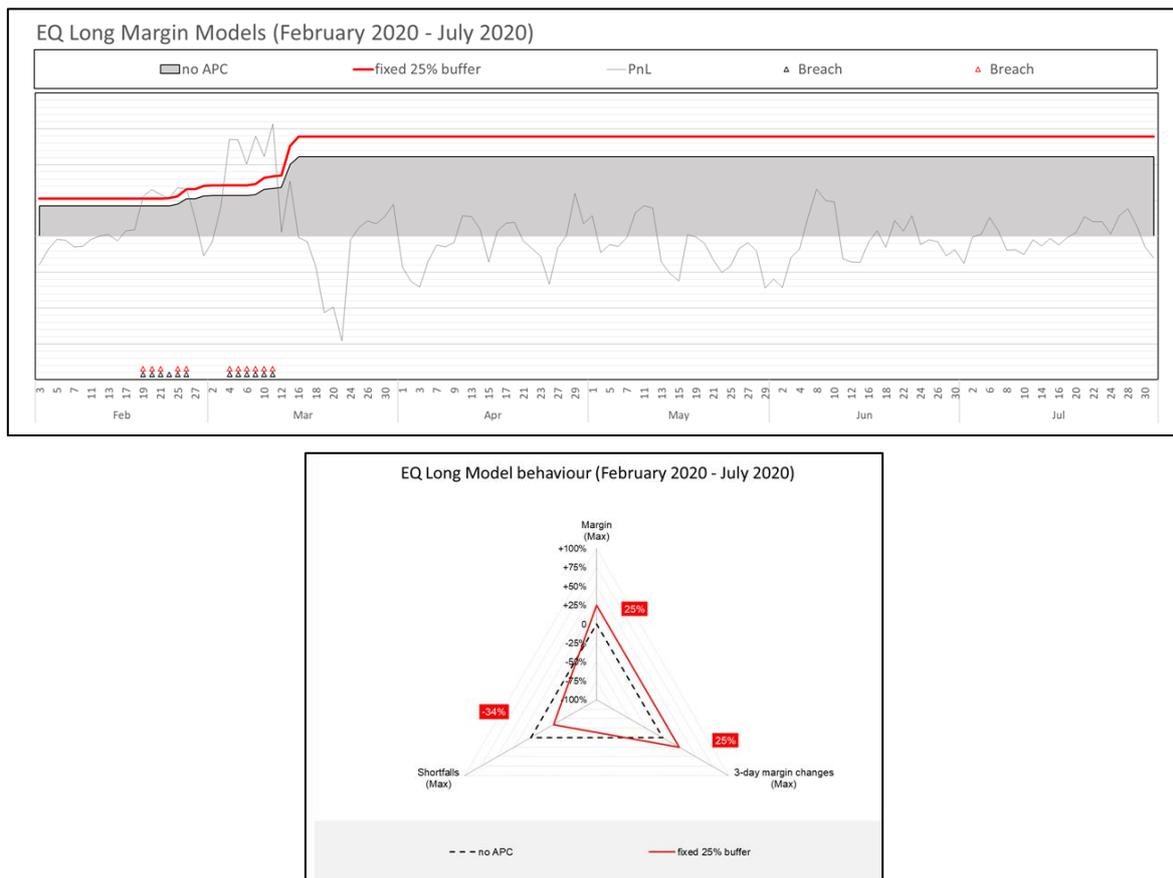


FIGURE 6: EXAMPLE OF PRESENTING THE PERFORMANCE ACROSS THREE DIMENSIONS

### 6.3.2.1 Results of the simulation of the performance of individual anti-procyclical Options

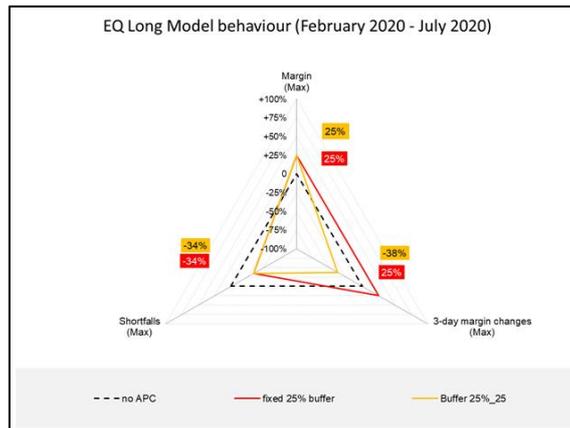
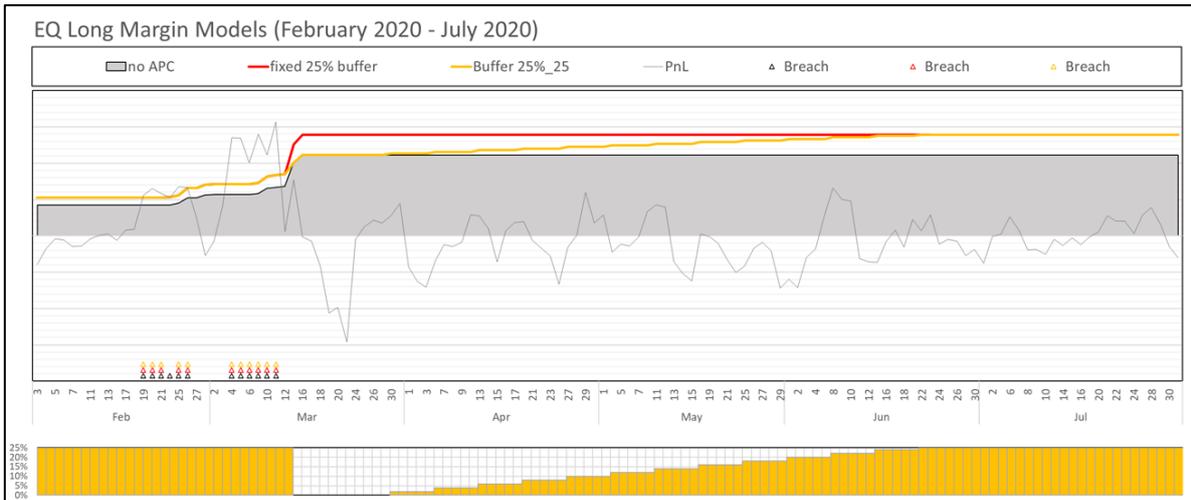
6.3.2.1.1 Results of the simulation of Option RTS Article 28(1)(a) – “25% Buffer”

**The impact of not exhausting the buffer when needed**

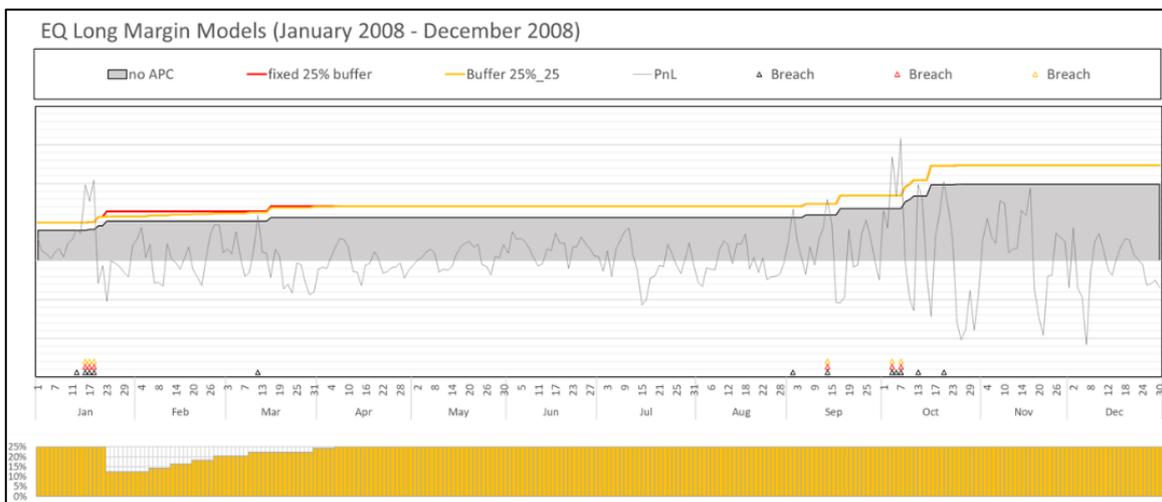


**FIGURE 7: EXAMPLE OF THE IMPACT OF NOT EXHAUSTING THE BUFFER WHEN NEEDED**

## Sensitivity of the effectiveness on the modalities of the exhaustion of the buffer



**FIGURE 8: EXHAUSTING THE BUFFER FOR BIG MARGIN CHANGES - 2020**



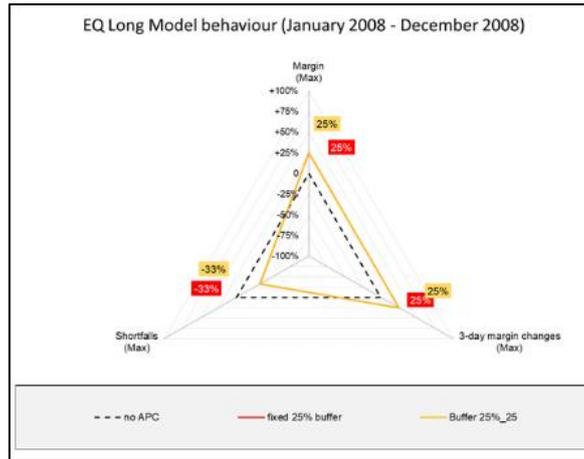


FIGURE 9: EXHAUSTING THE BUFFER FOR BIG MARGIN CHANGES - 2008

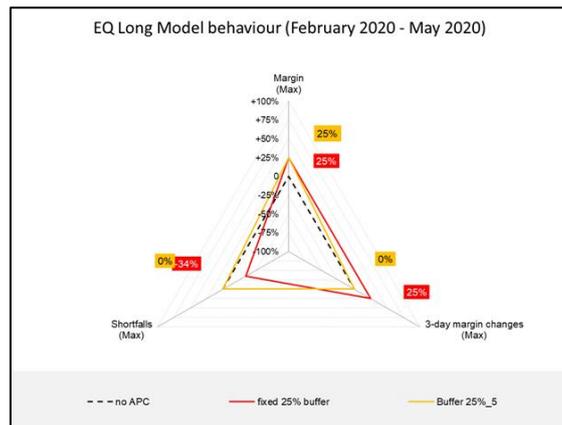
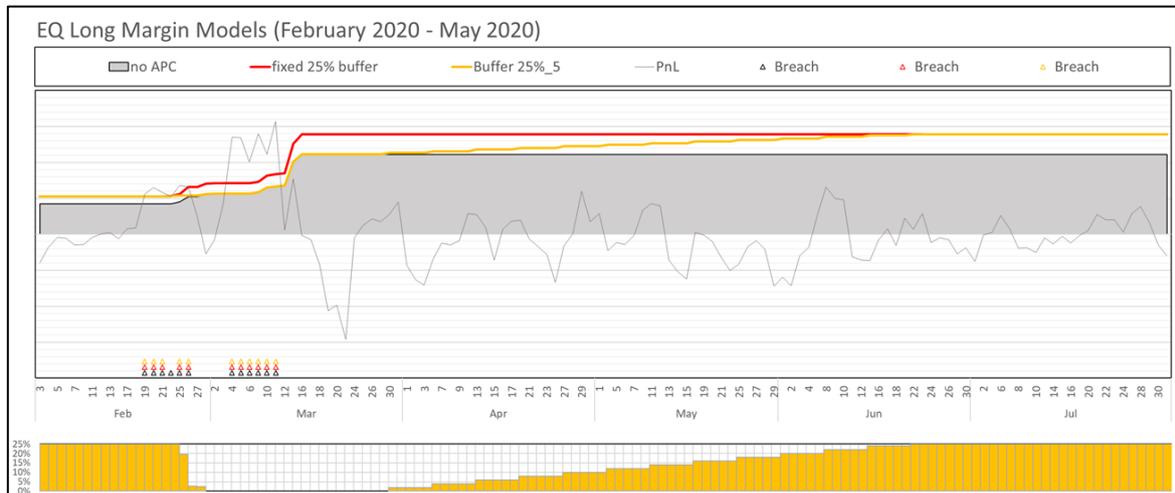
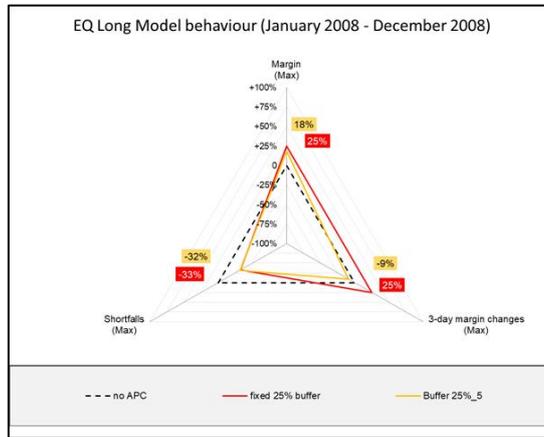
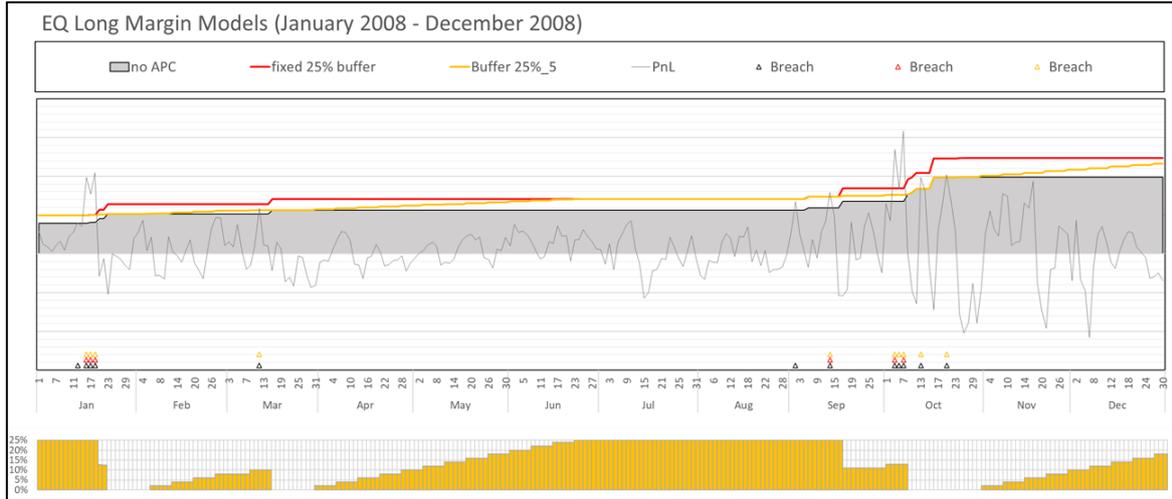
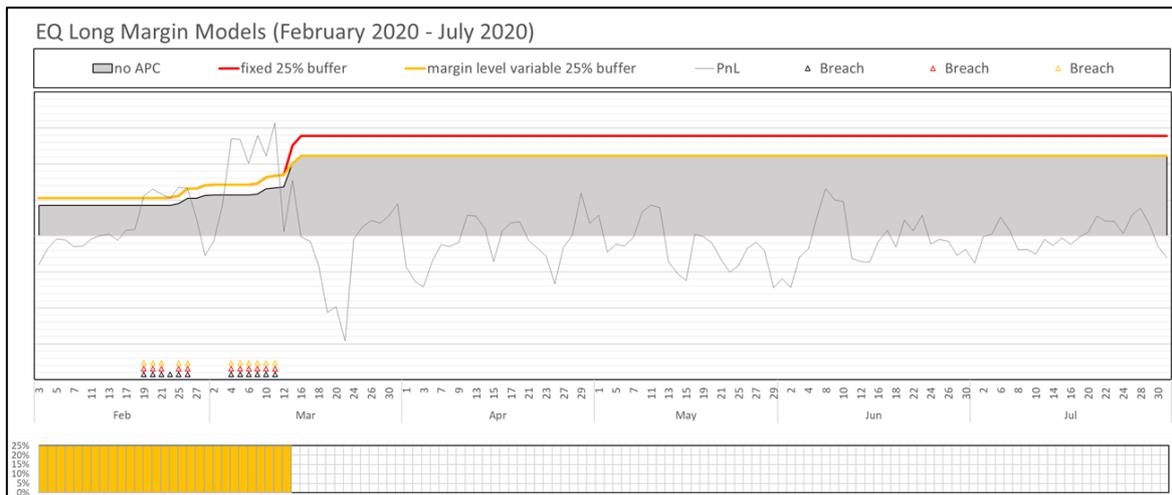


FIGURE 10: EXHAUSTING THE BUFFER FOR SMALLER MARGIN CHANGES - 2020



**FIGURE 11: EXHAUSTING THE BUFFER FOR SMALLER MARGIN CHANGES - 2008**



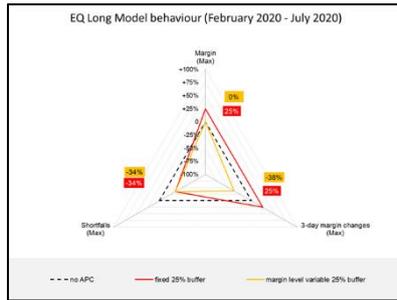


FIGURE 12: EXHAUSTING THE BUFFER WHEN THE MARGIN IS HIGH - 2020

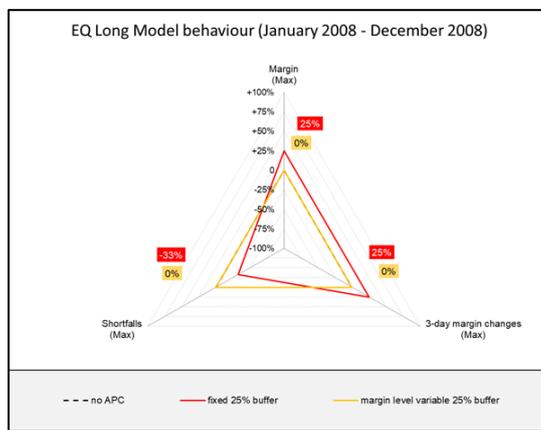
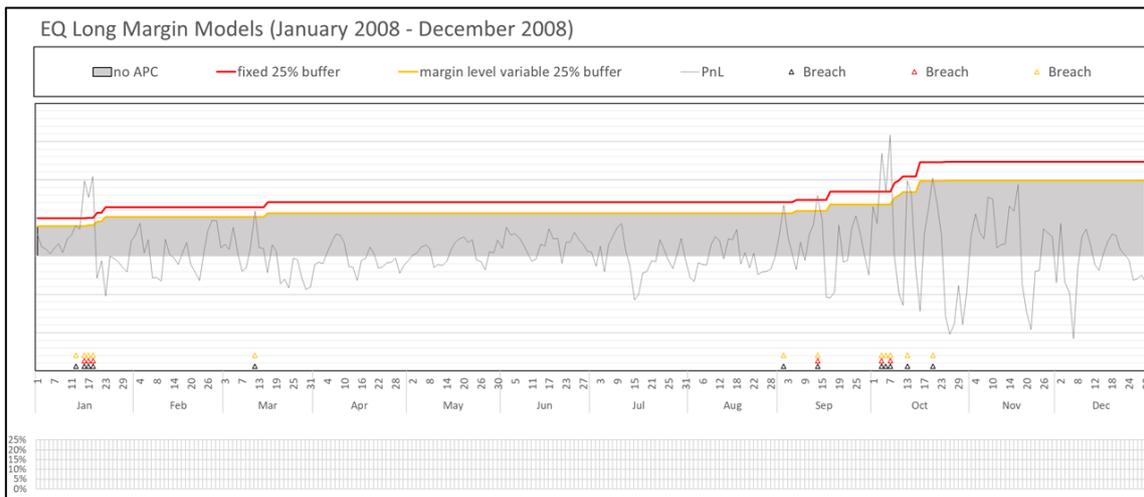
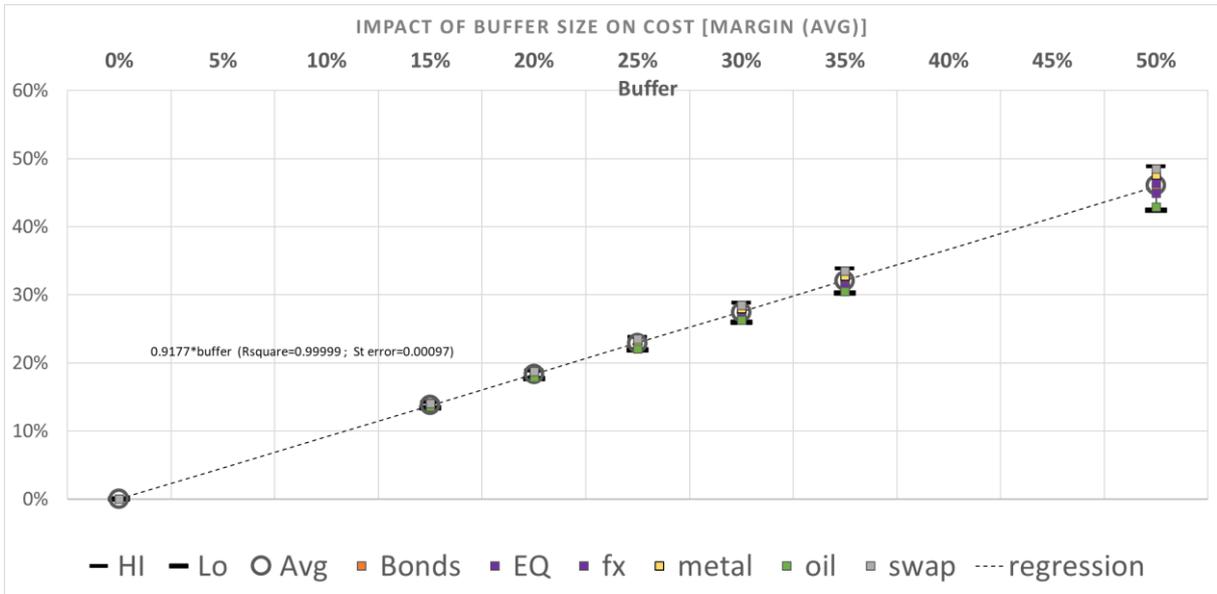
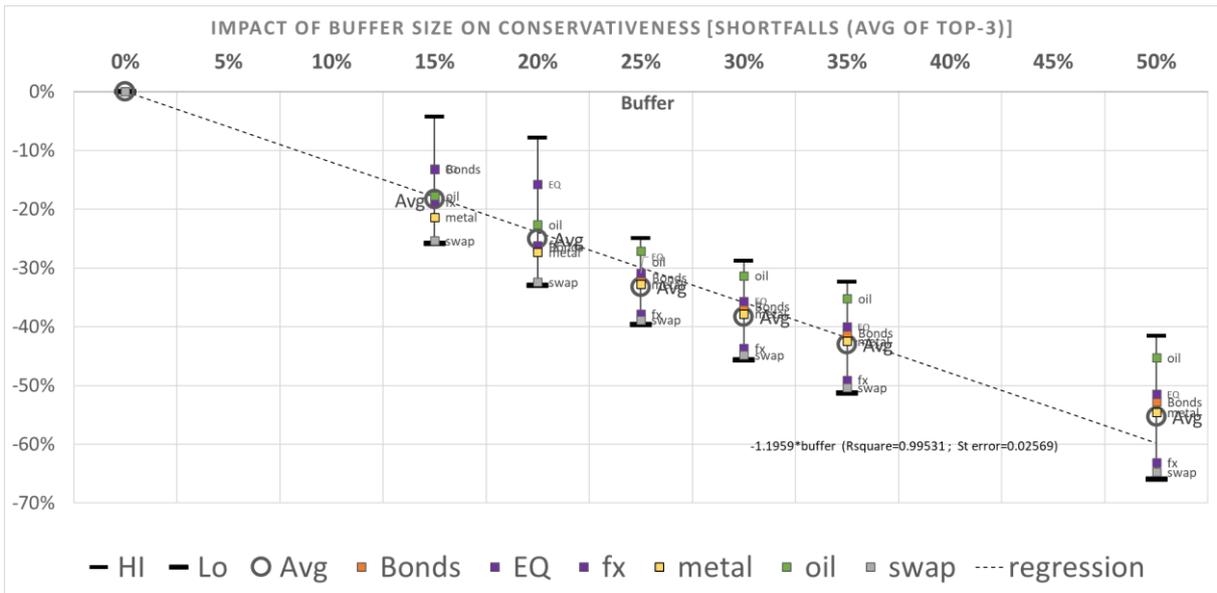


FIGURE 13: EXHAUSTING THE BUFFER WHEN THE MARGIN IS HIGH - 2008

### Assessing different levels of the margin buffer



**FIGURE 14: IMPACT OF BUFFER SIZE ON THE MARGIN LEVEL (AVG)**



**FIGURE 15: IMPACT OF THE BUFFER SIZE ON THE CONSERVATIVENESS (AVG OF TOP-3)**

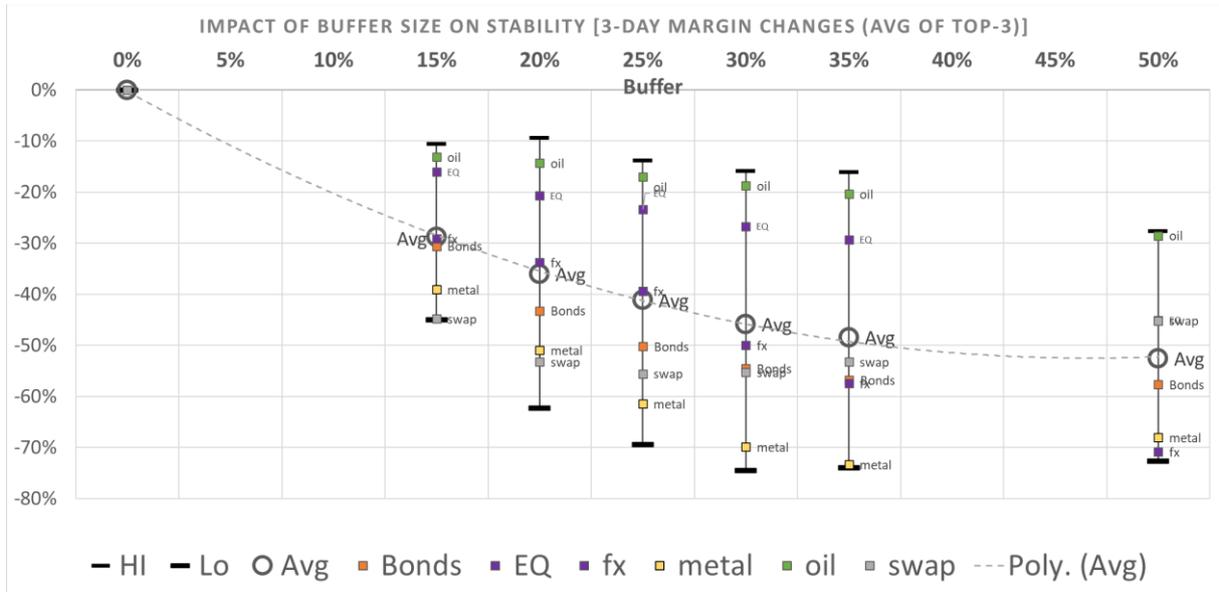


FIGURE 16: IMPACT OF BUFFER SIZE ON STABILITY (AVG OF TOP-3)

6.3.2.1.2 Results of the simulation of Option RTS Article 28(1)(b) – “25% weight to Stress”

**Impact of allowing for the temporary reduction of the weight**

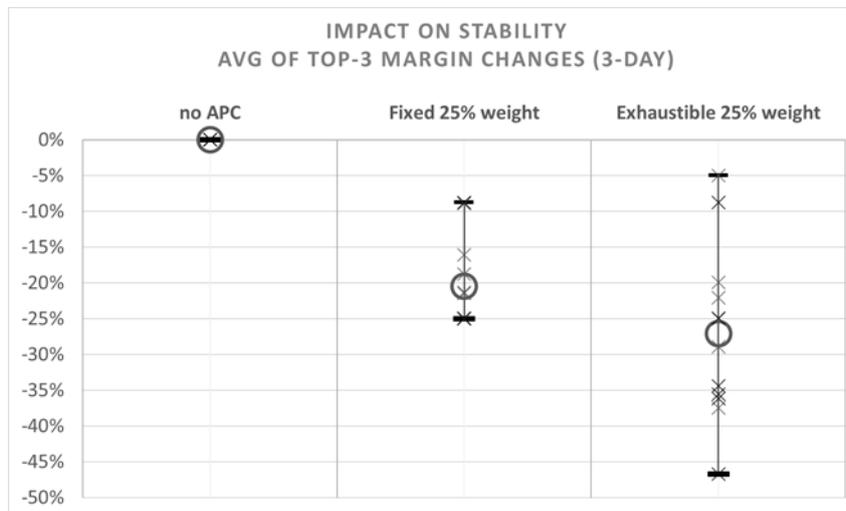
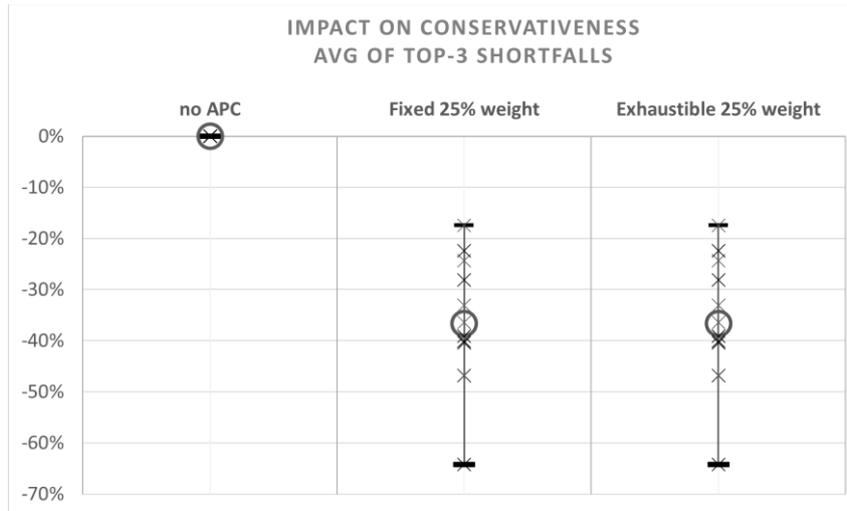
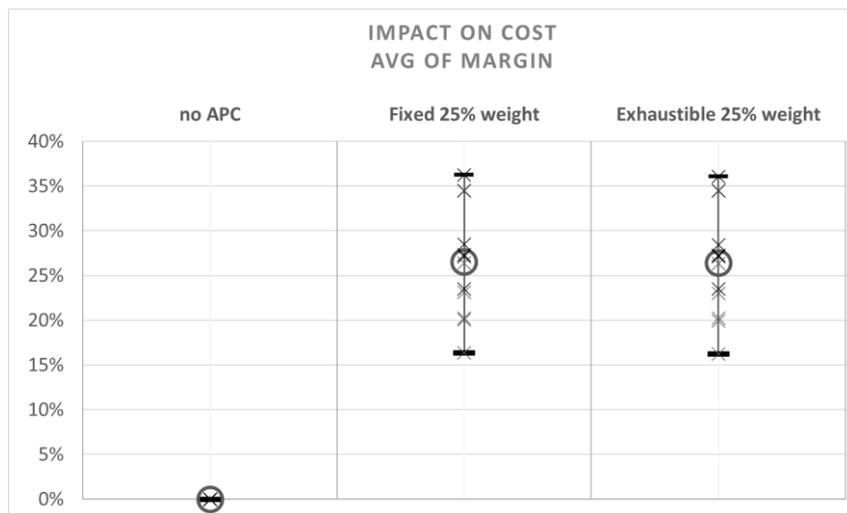


FIGURE 17: IMPACT OF REDUCING THE WEIGHT ON STABILITY

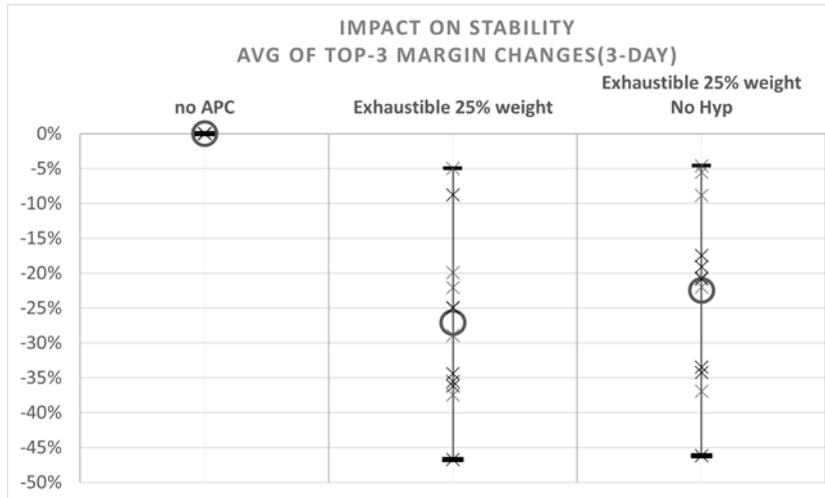


**FIGURE 18: IMPACT OF REDUCING THE WEIGHT ON CONSERVATIVENESS**

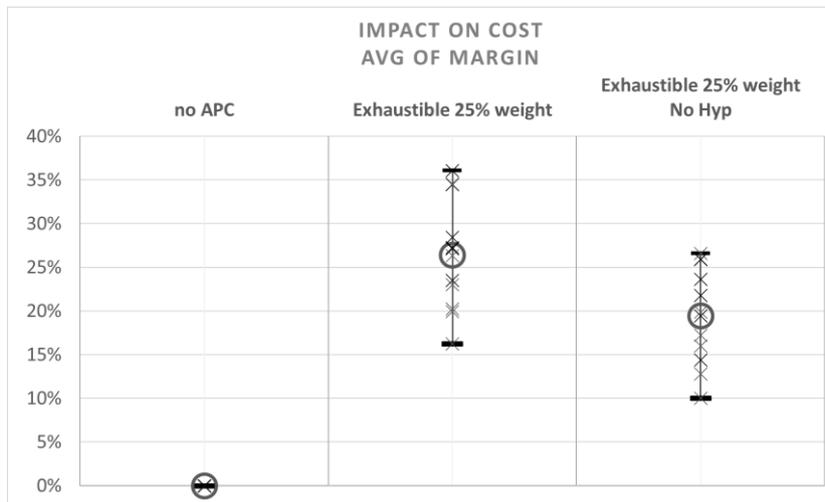


**FIGURE 19: IMPACT OF REDUCING THE WEIGHT ON MARGIN LEVEL**

## Impact of including hypothetical scenarios



**FIGURE 20: IMPACT OF INCLUDING HYPOTHETICAL SCENARIOS ON STABILITY**



**FIGURE 21: IMPACT OF INCLUDING HYPOTHETICAL SCENARIOS ON MARGIN LEVEL**

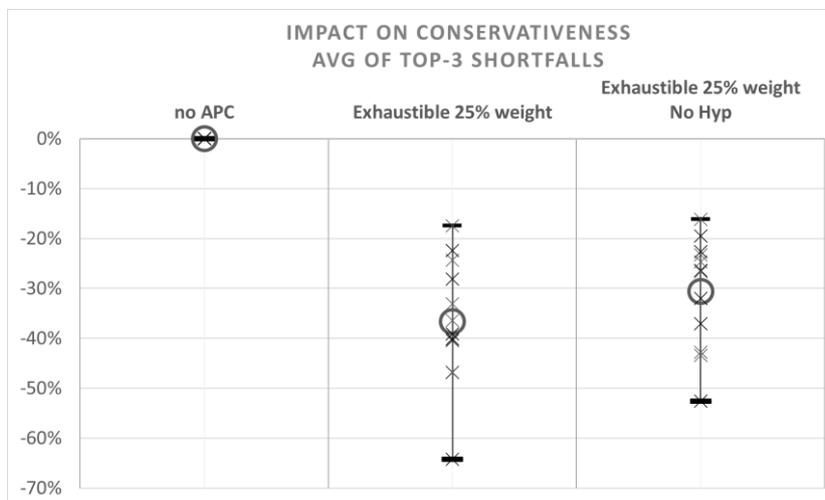


FIGURE 22: IMPACT OF INCLUDING HYPOTHETICAL SCENARIOS ON CONSERVATIVENESS

6.3.2.1.3 Results of the simulation of Option RTS Article 28(1)(c) – “Margin floor”

Different approaches of appending stress observations

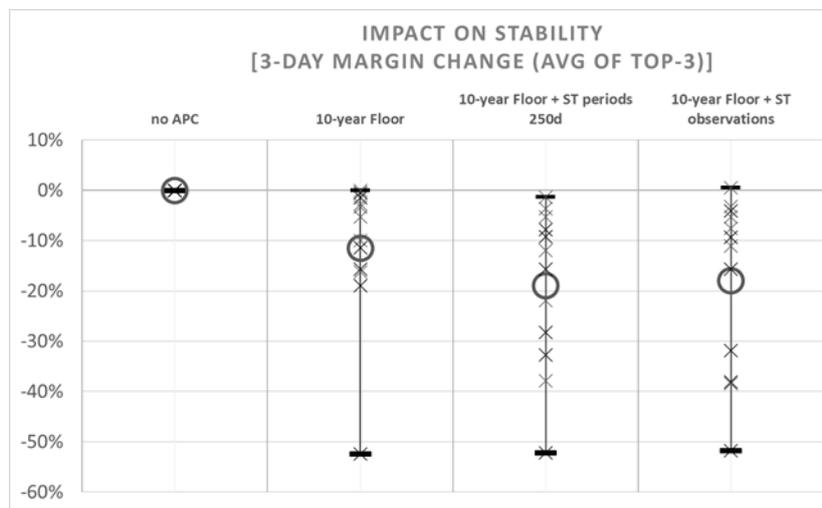


FIGURE 23: IMPACT OF DIFFERENT APPROACHES ON ADDING ST ON STABILITY

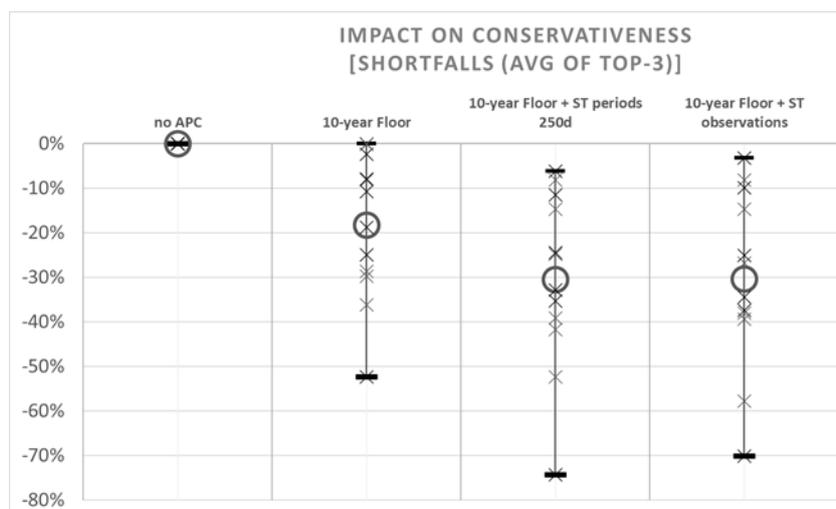
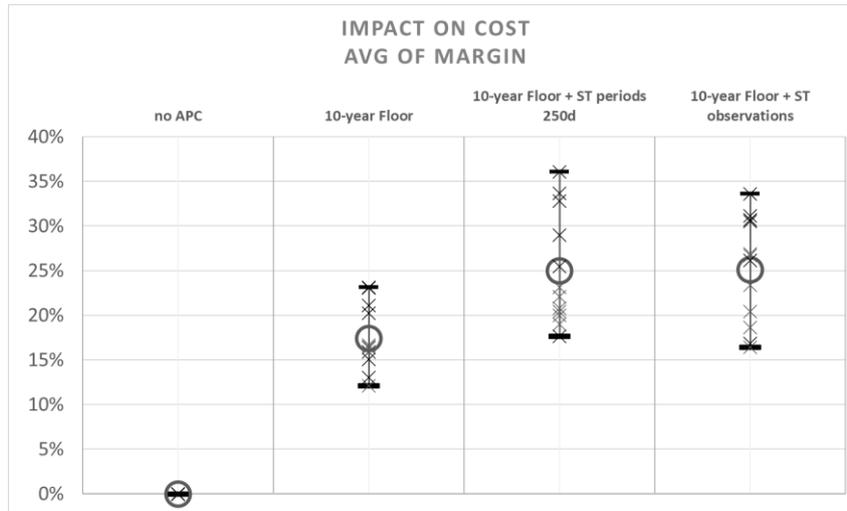


FIGURE 24: IMPACT OF DIFFERENT APPROACHES ON ADDING ST ON CONSERVATIVENESS



**FIGURE 25: IMPACT OF DIFFERENT APPROACHES ON ADDING ST ON MARGIN LEVEL**

6.3.2.2 Comparison of the performance of different anti-procyclical Options using the simulation results

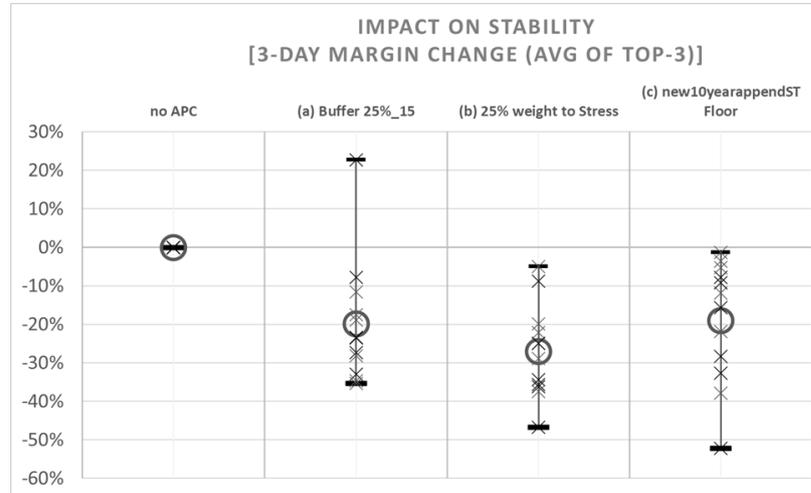


FIGURE 26: IMPACT ON STABILITY (AVG OF TOP-3)

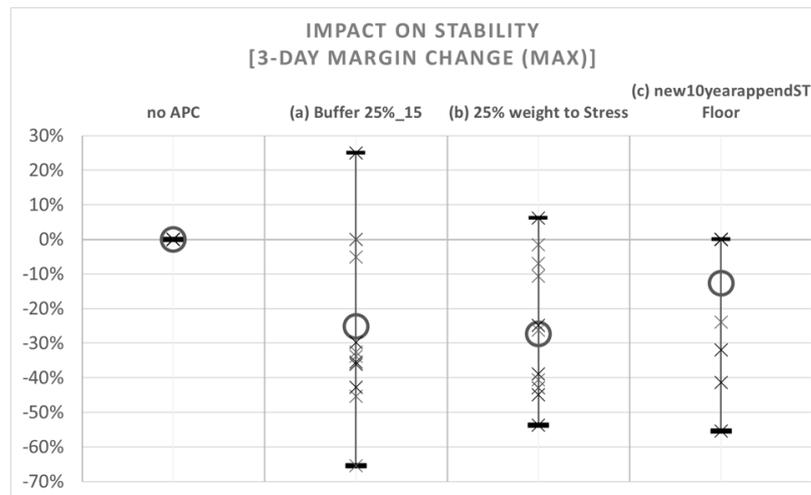


FIGURE 27: IMPACT ON STABILITY (MAXIMUM)

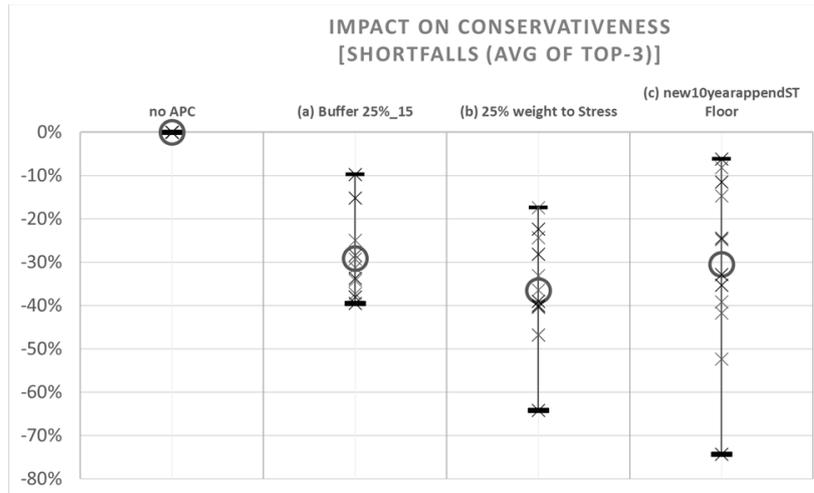


FIGURE 28: IMPACT ON CONSERVATIVENESS (AVG OF TOP-3)

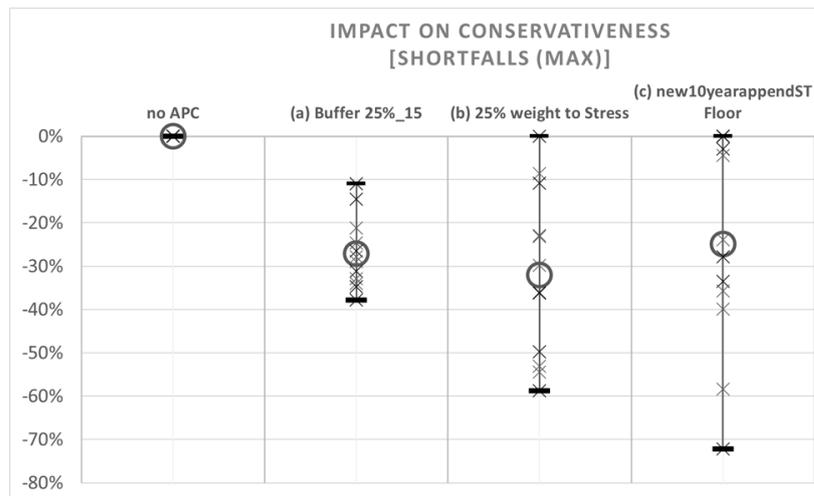


FIGURE 29: IMPACT ON CONSERVATIVENESS (MAXIMUM)

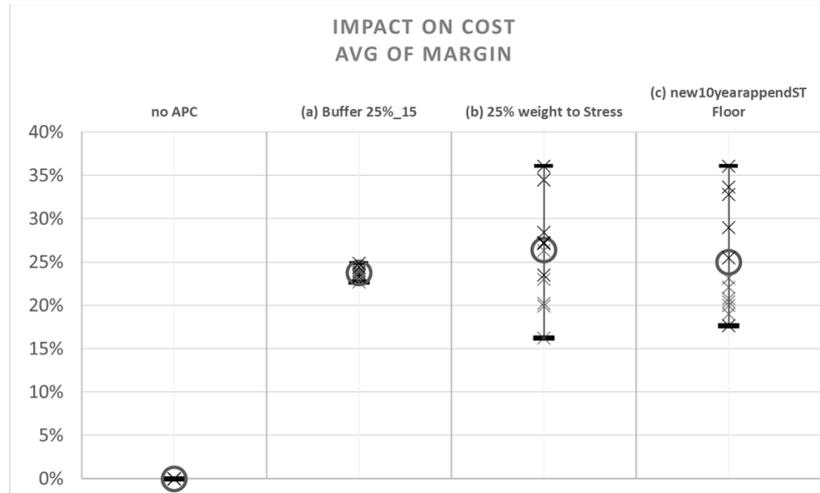


FIGURE 30: IMPACT ON MARGIN LEVEL (AVG)

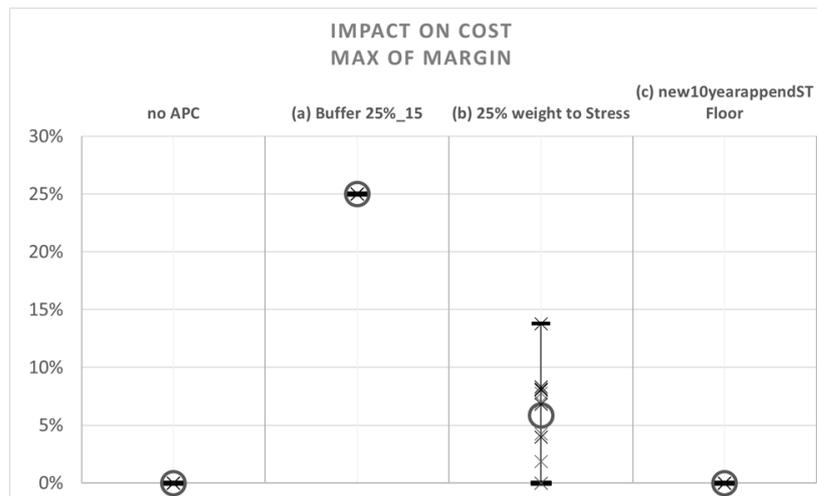


FIGURE 31: IMPACT ON MARGIN LEVEL (MAXIMUM)

## 6.4 Annex IV - Draft technical standards

### Procyclicality of Margins

**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.

(2) CCPs are 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.

(3) Since the adoption of the regulatory technical standards, the global market turmoil in March and April 2020 following the emergence of COVID-19 has acted as a test of the resilience of CCPs and the adequacy of their regulatory and supervisory framework.

(4) While CCPs proved overall resilient throughout the crisis, the surge in initial margin observed has raised questions as to whether some increases may have acted in a procyclical manner, potentially diffusing or even amplifying liquidity stress to other parts of the financial system.

(5) The CCP margin models have reacted differently, with some models performing in a more procyclical manner than others. Moreover, the implementation of the anti-procyclicality measures and policies varies widely across CCPs.

(6) Therefore, additional granularity of the requirements on CCPs are necessary to ensure the options chosen and the policies developed by CCPs to limit the need for procyclical margin revisions are properly calibrated.

(7) The requirements should detail the modalities and content of the procedures and documentation to be developed and maintained by CCPs against potentially procyclical margin revisions. These shall set out at least the justification for their choice, the risk appetite of the CCP, the quantitative metrics 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.

(8) When selecting and revising the parameters of the margin model in order to better reflect current market conditions, the options to address the potential procyclical effects of margin revisions should be applied at a minimum to all material risk factors, which could potentially lead to big-step changes in margins. The requirements should further detail how these options are calibrated and applied by CCPs, as well as the modalities and circumstances for their use.

(9) When assessing the procyclicality of its margins, 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;

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

(11) 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.

(12) 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*

Delegated Regulation (EU) No 153/2013 is amended as follows:

(1) Article 28 is amended as follows:

(a) paragraph 1 is replaced by the following:

‘1. When a CCP selects and revises the parameters of the margin model in order to better reflect current market conditions, it shall take into account any potential procyclical effects of such revision. In doing so, the CCP shall select one of the following options:

(a) applying 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. The CCP shall assess whether a higher buffer would be needed considering its own products and margin model. The CCP shall justify its initial choice of the size of the buffer and regularly assess its appropriateness.

The CCP shall develop and maintain documented policies and procedures setting out the circumstances under which the buffer could be temporarily exhausted or subsequently replenished. These should include metrics and thresholds to determine when margin requirements are rising significantly and which may warrant the exhaustion of the margin buffer, and the conditions for replenishment of the buffer following its exhaustion. These should specify the pace and extent to which the buffer should be exhausted, partially or totally. These should also include 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;

(b) identifying and reviewing at least annually a set of extreme market movements that include past observations from the most volatile periods and from historical scenarios identified under Article 30(2)(a). The CCP shall consider also including potential future scenarios identified under Article 30(2)(b). The CCP shall ensure that this set includes an adequate number of extreme market movements for all margined products, including the ones that could expose it to greatest financial risk. The CCP shall consider reviewing the set of extreme market movements more frequently taking into account the procyclical effects from such revision.

The CCP shall calculate a stress margin using the same model and parameters 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. The CCP shall recompute the stress margin at least daily and shall avoid using scaling techniques that can affect the severity of observations or calculated stress margin.

The CCP shall assign 75% weight to the margin calculated in accordance with Articles 24, 25, 26 and 27 (i.e. ‘unadjusted margin’) and 25% weight to the stress margin. If the stress margin is smaller, the CCP shall apply a 100% weight to the unadjusted margin and 0% to the stress margin. During a period where calculated margin requirements are

rising significantly, the CCP may temporarily increase the weight that is applied to the unadjusted margin and equally reduce the weight applied to the stress margin.

The CCP shall develop and maintain documented policies and procedures setting out the circumstances under which the weight that is applied to the unadjusted margin could be temporarily increased. These should include metrics and thresholds to determine when margin requirements are rising significantly and which may warrant the temporary increase of the weight, and the conditions for its subsequent reduction. These should also include the governance arrangements for the approvals for the increase and reduction of the weight, including cases where the CCP would not follow the predefined thresholds.

- (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.

The set of extreme market movements is identified and reviewed at least annually to include past observations from the most volatile periods and from historical scenarios identified under Article 30(2)(a). The CCP shall consider also including potential future scenarios identified under Article 30(2)(b). The CCP shall ensure that this set includes an adequate number of extreme market movements for all margined products, including the ones that could expose it to greatest financial risk. The CCP shall consider reviewing the set of extreme market movements more frequently taking into account the procyclical effects from such revision.

When calculating the margin floor, the CCP shall avoid using scaling techniques that can affect the severity of observations, extreme market movements or calculated floor margin.

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

- (b) paragraph 2 is replaced by the following:

- ‘2. The CCP shall ensure that the options set out in paragraph 1 are applied 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.

The CCP shall consider the impact that the risk factor change will have on the margin, including for products with non-linear dependence on risk factors.

The CCP may use different 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. These may be applied at product or portfolio level.’;

(2) the following article is inserted:

*‘Article 28a*

**Procyclicality policies**

1. A CCP shall develop and maintain an internal policy setting the arrangements used to limit the procyclicality of margin requirements. These shall be documented in the CCP’s procedures and be reviewed at least once a year. These shall set out at least:
  - (a) the justification and the related validation approach behind the choice of one of the options 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;
  - (b) the risk appetite of the CCP for the potential procyclical effects of its margin 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 margins and add-ons, especially during stress periods, including the short-term and long-term stability of margins over time and their conservativeness, as well as the potential for margins to be set at an excessive level;
  - (d) the frequency at which it conducts the assessment with respect to the choice between the options mitigating the potential procyclical effects of margin 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 risk appetite, 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 choice between the options mitigating the potential procyclical effects of its margin revisions as provided for in Article 28(1).
2. When assessing the procyclicality of its margins, 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.

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