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1 August 2019

Dear Sir,

**Consultation on Draft Regulatory Technical Standards on the Standardised Approach for Counterparty Credit Risk (SA-CCR)**

HSBC welcomes the opportunity to respond to the European Banking Authority (the EBA) consultation paper (the Consultation) related to the implementation in the European Union of the SA-CCR framework.

To help achieve global consistency, HSBC believes that guidance should be provided at the Basel Committee level, and that any European guidance should be limited to European specific issues taking account of wider international developments.

We would like to highlight two changes of approach we believe to be important (and have expanded on these in our more detailed response):

- The EBA have a mandate to review SA-CCR more widely by mid-2023. The EBA should consider performing this review before SA-CCR is required to be used for own funds requirements. This would allow the shortcomings of SA-CCR to be addressed, particularly in relation to developments in bilateral margining requirements and the impact on end users, before the impacts are realised. It would also allow Europe to align to modifications that have been proposed in US rules to address some of the shortcomings and ensure global consistency. This work should also be fed back to the Basel Committee to improve the framework at international level.
- We note that, although the introduction to the RTS has a list of products that are presumed to have a single risk driver, the RTS itself avoids such lists. We strongly support the avoidance of lists, and instead believe that an enhanced set of criteria and principles should be considered.

We would be happy to discuss our comments further if this would be helpful.

Yours sincerely,

A handwritten signature in black ink, appearing to read "Anant Gajjar".

Anant Gajjar  
Head of Capital and Treasury Analytics, EMEA

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## HSBC detailed response to the Consultation paper

### Section 1: Overarching points

#### Standardised Approach to Counterparty Credit Risk (SA-CCR)

##### Introduction

- Since SA-CCR was developed before the margin requirements for uncleared derivatives (MRUD) rules came into force, though the current SA-CCR standard does consider initial margin, it now needs to be revisited to ensure that it provides the right level of offset for initial margin in the light of actual rules and practice. Furthermore, the new margining rules have led to the creation of new Credit Support Annexes (CSAs) under the existing netting agreements, and therefore the existence of multiple CSAs under a single agreement is more common. The approach of SA-CCR to treat these as individual netting sets does not reflect the economics of netting that would apply in the event of default of a counterparty. This review and modification of SA-CCR should be a priority before SA-CCR is implemented.
- SA-CCR will also have a significant adverse impact for uncollateralized, directional portfolios which are generally typical of end-users of derivatives hedging financial risks, because the potential future exposure (PFE) does not reflect the true level of underlying economic risk. This gap is due to a combination of conservative assumptions on diversification benefit (no offsetting is allowed across hedging sets), high add-on factors, and the 1.4 multiplier. The higher capital requirements will reduce the ability to service clients, potentially driving them to leave their risks un-hedged or to pursue less-expensive protection providers outside of the regulated banking sector.

##### 1. Initial Margin

Initial margin (IM) has been identified as a key risk mitigation technique and is becoming a regulatory requirement for non-centrally cleared trades. The existing formulation in the SA-CCR will allow *some* reduction of PFE, but the level of reduction will not be in line with the level of risk mitigation provided by the IM. The conservative assumptions embedded within SA-CCR result in a punitive treatment of IM, leaving in all instances the multiplier meaningfully higher than it should be. We therefore believe that SA-CCR should be made more sensitive to over collateralization and negative MTM.

*Proposal: Revisit formula for IM recognition.*

##### 2. Multiple CSAs under a single netting agreement

SA-CCR prescribes that each Credit Support Annex (CSA) needs to be considered as its own netting agreement, as such there is no netting benefit for offsetting trades under the multiple CSAs. Although at the time SA-CCR was finalised this was not common practice under the new margining rules, it is more common to have multiple CSAs, one for legacy trades and one for new trades under margining rules. The requirements under SA-CCR penalise this operational requirements. This does not reflect the netting that would be applied under close out, where all the mark-to-market value of all trades would be netted with collateral under all CSAs to get to reach a final net settlement figure. Under SA-CCR a firm could be in the position where they have to hold capital despite having no net exposure, if exposure under one CSA is offsetting the other.

*Proposal: Allow netting across multiple CSAs.*

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### **3. The use of the alpha factor**

SA-CCR makes use of the alpha factor that is presently used when calculating the modelled exposure for counterparty credit risk. The Basel Committee (BCBS) has set the alpha to 1.4 referencing the ISDA documents written on the subject in 2003. Given the significant changes in markets since 2003, the validity of using this factor unchanged without mathematical justification is a concern. As the factor increases the replacement cost component as well as the Potential Future Exposure (PFE) component, it artificially increases the economic risk. This will particularly impact clients who are unable to post collateral.

*Proposal: Remove the alpha factor from SA-CCR or remove from the Replacement Cost (RC) component and recalibrate the factor.*

### **4. Conservative add-ons and assumptions on diversification benefit**

Although the add-ons are designed to reflect a stressed volatility there appears to be excessive conservativeness embedded. This is exacerbated for IR, where there is an additional duration multiplier. Under a balanced portfolio the impacts would net off, however a directional portfolio will suffer a significant impact from this conservatism. Furthermore, as there is no diversification benefit offered across hedging sets in both IR and FX, the worst case scenario is capitalised for. As such SA-CCR particularly penalises diversified uncollateralised directional portfolios. These are typically the types of portfolios that end users of derivatives would generate. As such, the conservatism will particularly impact the servicing of these clients.

*Proposal: Recalibrate the SA-CCR add-ons and allow diversification benefit across hedging sets.*

### **5. The use of the analytic formula for Options**

SA-CCR prescribes an analytical Black Scholes delta. It is unclear how this should be applied to various products. Some of these issues are explained below.

- i) *Correlation products:* Rainbow options – best / worst of: These options are cheaper than options on individual stocks/asset classes due to the effect of correlation. Only the best or worst is paid out. For example
  - a) Best/Worst return single asset class: For example two single names and an index. The formula given applies to single underlying options. Guidance is required whether in this case a multivariate log normal model can be used. Further the rules do not incorporate a correlation factor for FX/IR.
  - b) Best/Worst return of equity index, bond index, and foreign currency. As above can a multivariate model be used and if so what correlations should be applied across asset classes.
- ii) *American options:* The analytic formula applies to European options, American option deltas are often derived using numerical methods, with the underlying dynamics still following that of the Black-Scholes model. It would be helpful to permit the use of market standard methods for calculating delta.
- iii) *Other options:* The above is not an exhaustive list. Other products exist which do not fit the analytical formula.



*Proposal: The use of deltas already in firms' risk or valuation systems is the ideal solution which solves both the above and additional technical issues. It also aligns to the economics of the trades given that the mark-to-market valuation used for the replacement cost also uses the same model. However, if this is not acceptable then firms should have the flexibility to calculate the delta using appropriate methods with the requirement being that the calculation uses a log-normal model with the specified supervisory volatility and correlations where applicable. Correlation to be provided for IR/FX.*

## **6. FX triangulation and recognition of diversification**

FX hedging sets are defined based on currency pairs with no diversification benefit recognised. This results in positions where there is no economic risk being capitalized e.g. triangulation of FX trades. The ISDA SIMM model as approved by regulators has such a correlation factor included when determining IM and it would be congruent to have this in standardized PFE calculations too. Furthermore, this is not aligned to the other asset classes where an aggregation formula with correlations is used.

*Proposal: FX hedging sets with a counterparty should instead be considered as single hedging set as per equity and credit by:*

- i) determining a net position in each currency, rather than per currency pair*
- ii) convert this to a single currency and then apply a correlation formula as is currently applied for credit and equity asset classes. No additional operational complexity would be involved as it the operational processes already exist for these asset classes.*

## **7. Target Redemption Forwards (TARFs)**

Under SA-CCR it is required to calculate the trade notional amount for each state and use the largest resulting calculation. This suggests for a TARF with 12 monthly cash flows the trade notional is the sum of the notional of each cash flow over 12 month period i.e. the state with the maximum notional assumes the pay-off cap has not been activated. The embedded optionality in TARFs needs to be recognized.

*Proposal: It would be appropriate to calculate a delta for the product i.e. this is not treated as a linear product/ strip of forwards.*

## **8. Impact of High Volatility**

The impact of including a high supervisory volatility of 120% for equities does not necessarily result in a higher (more conservative) delta. As the delta computation depends on T and S/K as well as volatility the use of a higher volatility can result in In-The-Money calls and puts (effectively delta one when at maturity with maximum exposure to the counterparty) having a lower delta.

*Proposal: The volatility parameters should be recalibrated.*

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## Section 2: Questions raised in the Consultation paper

The EBA should extend the consultation to address the shortcomings of SA-CCR, particularly in relation to developments in bilateral margining requirements and end user impacts, and raise these with the Basel Committee. The EBA should bring forward their review which has been mandated for mid-2023 and modify the calibration of SA-CCR to address the shortcomings.

### Mapping of derivative transactions to risk categories (Questions 1-3)

We note that, although the introduction to the RTS has a list of products that are presumed to have a single risk driver, the RTS itself avoids such lists. We strongly support the avoidance of lists, and instead believe that an enhanced set of criteria and principles should be considered. This could include the major underlying, the desk mandated to trade the product and risk limits for a desk. For example, if an equities desk trades an equity product with an FX risk factor such as a quanto equity option, and that equities desk has only relatively small risk limits on FX, then the product should be considered a contract concerning equities only.

The majority of products have only one major risk factor. As such, prescriptive approaches to identify multiple risk drivers for a small portion of the portfolio would be adding extra complexity for little gain. If more than one notional is applied, the diversification effects between risk factors are ignored which would create a disproportionate buffer of conservatism – a better way of capturing this potential extra risk is needed. As a starting point we propose that products are only assigned to a single risk category.

We would propose an alternative approach for mapping transactions. This approach would ensure a consistent capital treatment for all transactions of the same type and therefore provide more stability for capital requirements; at the same time it would reduce the operational burden which arises from sourcing sensitivities at a trade level on a daily basis.

Suggested approach:

1. An institution would create a granular list of product types [this would be a one-off exercise at SA-CCR go live and the list would expand as new trade types are created]
2. Periodically, at least annually for each product type, use the criteria/principles to qualitatively identify all product types that have a single risk driver and map to the appropriate broad risk category
3. For the product types that have been qualitatively assessed as potentially having multiple risk drivers perform a quantitative assessment at the portfolio level across all counterparties on all trades that fall under this product type:
  - a. Take all long live trades under the product type and compute the portfolio level sensitivities using a method that is used for regulatory computations [allows scope for FRTB, MRUD].
  - b. Follow the approach specified in the RTS to assess at the portfolio level the main risk drivers for the trade type and map accordingly.
4. Maintain this list for the quarter and re-assess
5. For new trade types [those which are not in the list of point 1] within the quarter, where a mapping has not been performed, use scenario analysis or hypothetical portfolio of aged transactions (in the money, at the money or out of the money) to determine the sensitivities and follow RTS methodology to map until the quarterly assessment is performed. Noting this would only be up to the first quarter after the trades went live as they would use the above methodology when the next quarterly refresh occurs.

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The reason for only using longs is to prudentially avoid the issue where you have back-to-back trades (or hedge with the same trade type) so the portfolio sensitivity for all trades would show zero (or be minimal).

These are some of the possible outcomes:

- i. Some trades by themselves may only have one driver but would fall into multiple drivers because of the calculation at the portfolio.
- ii. Some trades by themselves have multiple drivers but fall into a single category because of the calculation at the portfolio level.
- iii. Some trades by themselves fall into another risk category because they have aged that way whereas they remain in another category because of the calculation at the portfolio level.

**Question 1.** Which one of the two options do you think is more appropriate as thresholds in Article 3(b) steps (v) and (vii) (option 1a: Y%=50% and Z%=25%, or option 1b: Y%=60% and Z%=30%)? Please provide the rationale for the chosen option.

When comparing the two options, we think that the more appropriate is option 1b: Y%=60% and Z%=30%

This is because, we think that 30% threshold should be sufficient to capture the materiality of risk drivers.

**Question 2.** What are your views about the general quantitative approach methodology, which hinges on FRTB SA sensitivities? Please provide examples of cases where computing FRTB SA sensitivities might raise some issues.

The quantitative approaches suggested would require both the calculation of sensitivities and a relevant shock to be applied for all derivatives products, even if to only assess a threshold. Operationally, this would require significant development to source risks for every derivative transaction. For linear products the sensitivity is not readily available for every transaction as under the market risk framework, risks are not stored at that level of granularity. Risks are considered at the level of books and portfolios where derivative positions are aggregated with hedges to get the correct representation of risk. Where a product has optionality primary trading systems are more likely to have sensitivities stored, but this would be a subset of the total derivatives portfolio. Furthermore, this would put a significant dependency between SA-CCR and FRTB as resources will be primarily focused on FRTB implementation challenges.

**Question 3.** Do you have any views on the appropriateness, for smaller institutions, of the alternative SA CCR add-ons approach (Article 3(2)) in overcoming the issues (if any) raised by the general FRTB SA sensitivities approach?

We do not have any views on the appropriateness, for smaller institutions, of the alternative SA-CCR add-ons approach (Article 3(2)).

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## Supervisory delta formula for interest rate options (Questions 4-7)

There is a variety of methods that can be used to account for negative interest rates including, using shifted log-normals or using a model that assumes a normal distribution. The proposed method allows the use of the volatility as specified in the SA-CCR framework but requires a regular recalibration the lambda parameter. A normal distribution method would not require a regular recalibration but would need the log normal volatilities specified in SA-CCR to be transformed into a normal volatility.

Under the log-normal model, the problem with negative rates persist as there may be cases that the lambda is smaller than a negative strike that a firm has traded at. In order to solve this issue, and more generically for the other risk classes where anything other than vanilla products cannot easily be accommodated within the framework, we believe it would be more appropriate to allow firms to use internally generated deltas using models that are used for pricing and risk generation. Firms could still use the supervisory specified volatilities if necessary, in order to generate the deltas.

**Question 4.** *Do you think the approach outlined here should be applied at currency level (option 3a) or transaction level (option 3b)?*

A normal model (as opposed to lognormal) will be more suitable. This is because, it will naturally solve the negative rates concern and it does not require any further recalibration or change of the formula.

However, if we have to use the shifted lognormal distribution, we prefer option 3 a - currency level, as this provides more transparency on the used model (having the same model for all transactions within the same currency). This is also consistent with our risk management framework.

For the extreme case of very negative strikes (below lambda), where the formula will not work, we propose to put a conservative delta at 1.

**Question 5.** *Which one of the three options (option 4a: 1 bp, option 4b: 0.1% or option 4c: 1%) do you think is more appropriate as a threshold? Please provide the rationale for the chosen option.*

We believe that Option 4c: 1% is more appropriate as a threshold. This is because, it is the option which generates a reasonable probability distribution.

We recommend a shift between 1% and 3%. This is because, if the shift is too small, the mean of the log normal distribution will be too close to zero, generating an inappropriate distribution with a big density around zero. Thus, in order to have a reasonable probability distribution and meaningful prices, the shift should be large enough.

**Question 6.** *Please provide examples of cases where the possibility to set the shift  $\lambda$  according to the prevalent market conditions (option 4) might:*

- *provide some benefits*  
Having a dynamic lambda is a good way to design a lambda that works in all cases (or almost, apart for very negative strikes in case of option 3a).

It becomes unnecessary to set up a process to monitor the rates, and change the lambda when needed, which will raise more questions around when to trigger the change, and what should be the level of the new lambda.

Thus, the proposed methodology seems more practical and simpler to put in place.

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- *raise some concerns*  
There are no concerns with setting the shift  $\lambda$  according to the prevalent market conditions.

**Question 7.** *Do you consider necessary an adjustment to the supervisory volatility parameter  $\sigma$  as defined in Article 5? In the case an adjustment is considered necessary, how should it be carried out?*

We do consider it necessary to make an adjustment to the supervisory volatility parameter  $\sigma$  as defined in Article 5. This is because, when the shift changes, this will impact the ATM price. Hence, the volatility needs to be changed in order to reflect that. The adjustment should be carried out in order to fit the same ATM price.

The ATM price is given by the Black-Scholes (“BS”) formula:

ATM price = BS( $\sigma$ , Fwd +  $\lambda$ , Fwd +  $\lambda$ , t)

Where  $\sigma$  is the volatility parameter, Fwd is the forward rate,  $\lambda$  is the shift parameter

If  $\lambda$  changes to  $\lambda'$ , then  $\sigma$  needs to be changed to  $\sigma'$ , where:

BS( $\sigma$ , Fwd +  $\lambda$ , Fwd +  $\lambda$ , t) = BS( $\sigma'$ , Fwd +  $\lambda'$ , Fwd +  $\lambda'$ , t)

As a first order approximation, this equation can be simplified to:  $\sigma * (\text{fwd} + \lambda) = \sigma' * (\text{fwd} + \lambda')$

### **Determination of long or short positions (Question 8)**

**Question 8.** *Do you think the specified method for determining whether a transaction is a long or short position in a material risk driver is adequate? If not, please provide an explanation.*

There are instances, such as basis swaps where it is not immediately clear whether there is a long or short position in the risk driver. However, as long as a consistent convention is adopted by each individual bank for all instruments then, the outcome remains the same whether the position is a long position or a short position, as SA-CCR does not differentiate between a negative and a positive value.