

The European Banking Authority
20 Avenue André Prothin
92400 Courbevoie
France

Subject: Public consultation: Draft Regulatory Technical Standards on the specification of what an exotic underlying is and which instruments are instruments bearing residual risks for the purposes of Article 325u(2) under Article 325u(5) of Regulation (EU) No 575/2013 (revised Capital Requirements Regulation – CRR2)¹

The International Swaps and Derivatives Association (ISDA) and the Association for Financial Markets in Europe (AFME), the 'Joint Associations', and their members, 'the Industry', welcome the opportunity to comment on the EBA's consultation on the "draft RTS on residual risk add-on".

The Industry appreciates the EBA's efforts in developing regulatory standards to identify instruments exposed to residual risks and we are confident that the constructive feedback we provide in this comment letter will help the EBA's decision-making process.

The Industry remains concerned by certain elements in the Basel III reforms and the significant impact the package will have on capital requirements for specific product and risk categories. The implementation of the Fundamental Review of the Trading Book (FRTB) will materially increase the minimum capital requirements for market risk for banks with market making activities in the EU and will potentially result in more bifurcation between liquid and less liquid instruments and amplify capital requirements for particular asset classes when the market's liquidity deteriorates.

We furthermore need to reiterate the important role of the standardised approach in the revised market risk capital framework since it is the basis of the capital charge for banks that do not have an internal approval and it is part of the capital charge for internal models approach (IMA) banks either directly for desks not validated for IMA or through the capital output floor.

In the standardised approach, the RRAO constitutes a sizable part of the overall capital charge. Hence, it is important to adequately define the perimeter of in-scope instruments, consider the appropriate level of the incremental capital charge and recognise the risk reduction benefits of hedges where appropriate.

The Industry in support of this response conducted a quantitative survey on the impact of the RRAO capital charge. The results were provided by 8 internationally active banks with significant activities in the EU. The data showed the RRAO capital charge for those banks is significant with a median of 15% of the total FRTB SA capital charge. Hence, the RRAO remains a key concern for the Industry. In particular, CMS spread options are extremely punitive with 57% of the total RRAO capital charge. Further details relating to this survey can be found under question 8.

¹ <https://www.eba.europa.eu/calendar/consultation-draft-rts-residual-risk-add>

The Industry reiterates that consistency in the capital rules implementation is important both across EU institutions and globally across regions. This is particularly relevant to the implementation timelines. We welcome globally consistent timelines and standards.

We thank you in advance for your consideration and please do not hesitate to contact the undersigned associations with questions or if you would like to discuss our recommendations further. We remain committed to assisting policymakers in achieving the objectives of this important RTS.

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Article 1: Specification of exotic underlyings

Explanatory text for consultation purposes When developing these draft RTS, the EBA is requested to specify what an exotic underlying is. Given that the EBA considers that the general condition in Article 325u(2)(a) are sufficiently clear for identifying what an exotic underlying is (and therefore for identifying the scope of instruments referencing an exotic underlying), no additional specification has been included in these RTS. In, addition, the EBA is requested to examine whether longevity risk, weather, natural disasters and future realised volatility should be considered as exotic underlyings. The EBA, after having examined the characteristics of those risks, confirms that longevity risk, weather, natural disasters and future realised volatility should be considered as exotic underlyings, as indicated in Footnote 1 of paragraph MAR23.3 of the Basel text. Such list of exotic underlying should be considered non-exhaustive and should serve to complete the general definition, allowing for an immediate identification of the underlyings included in the list as exotic. While the Basel text does not mention any other exotic underlyings other than longevity risk, weather, natural disasters and future realised volatility, it should be assessed, however, whether it would be needed to extend such list. Questions for consultation:

Q1: Do you think that any of the elements constituting the conditions in Article 325u(2)(a) require additional clarification? If yes, which elements should be clarified?

Response:

MAR23.3 states that “Instruments with an exotic underlying are trading book instruments with an underlying exposure that is not within the scope of delta, vega or curvature risk treatment in any risk class under the sensitivities-based method or default risk capital (DRC) requirements in the standardised approach.”

However, different institutions may model future realised volatility in different ways, either as an underlying or as a payoff.

- If future realised volatility is directly modelled as an underlying, then it is not captured by SBM and DRC and therefore qualifies for RRAO as an “exotic underlying” as per MAR23.3 FAQ1².
- If future realised volatility is modelled as a payoff (for example, a variance swap on the S&P500 index may be modelled as an exotic payoff referencing the underlying equity, i.e. the S&P500 index) then in this case the instrument will be fully within the scope of delta, vega, curvature and default risk capital (DRC) for equity and general interest rates risk classes. Therefore it will not qualify for RRAO as an exotic underlying. However, such a pay-off on the S&P500 “cannot be written or perfectly replicated as a finite linear combination of vanilla options”, hence as per MAR23.4(1) it still qualifies for RRAO as an “Instrument bearing other residual risks”.

The Industry commented on the topic of RRAO for products involving future realised volatility in the response to the European Commission consultation on implementation of CRR3³, and we reiterate those recommendations below;

1. Ensure that only truly exotic underlyings are subject to the 1% RRAO charge, e.g. exclude future realized volatility from this category and thereby let volatility and variance derivatives be subject to the 0.1% RRAO charge.
2. For interest rate yield curves options: a reduction of RRAO charges to 0.01%, defining a risk sensitive notional, or an allowance to recognize positions that materially hedge the price risk of the exposure subject to RRAO.
3. Provide clarity as to whether long and short positions with same underlying risk can be netted.

² https://www.bis.org/basel_framework/chapter/MAR/23.htm?tldate=20230101&inforce=20230101&published=20200327

³ On page 103 of <https://www.isda.org/a/CkbTE/ISDA-AFME-Response-to-the-EC-Consultation-on-CRR3-Implementation.pdf>

Q2: Do you think that the list of exotic underlyings should be extended beyond the ones mentioned in the CRR mandate (i.e. longevity risk, weather, natural disasters and future realised volatility)? If yes, which other exotic underlyings should be included?

Response:

The Industry believes the list should not be extended.

Article 2: Specification of instruments bearing residual risks

When developing these draft RTS, the EBA is requested to specify which instruments are instruments bearing residual risks. Given that the EBA considers that the general provisions in Article 325u(2)(b) are sufficiently clear for identifying which instruments are instruments bearing residual risks, no additional specification in this sense has been included in these RTS. However, the EBA is also of the opinion that additional guidance could be provided, in order to complement such provisions and to ensure their harmonised application. Therefore, these RTS additionally specify a non-exhaustive list of instruments bearing residual risks. The non-exhaustive list of instruments bearing residual risks and that should fall under the scope of the RRAO follows the one proposed in paragraph 142 of the DP on the implementation in the European Union of the revised market risk and counterparty credit risk frameworks. The non-exhaustive list of instruments bearing residual risks has been included in the RTS with the purpose of facilitating an immediate identification of a number of instruments exposed to residual risks. The list, included for clarification purposes, uses a specific terminology for referring to the different instruments. However, the absence of a fully standardised financial instruments taxonomy could potentially pose some issues for clearly defining the scope of the list. Therefore, respondents are asked to provide feedback on the clarity of the terminology used in the list. In addition, it should be assessed whether such list needs to be extended or reduced.

Q3: Do you think that any of the elements constituting the conditions in Article 325u(2)(b) require additional clarification? If yes, which elements should be clarified?

Response:

Features of risk-free rates replacing IBOR rates as part of the benchmark reforms should not result in options on these rates being subject to RRAO. For example, if such a rate is fixed in arrears, then a cap or floor on that rate should not be subject to RRAO as a path-dependent option.

Please also refer to our response to Q8.

Q4: Do you think that the terminology used in the non-exhaustive list of instruments bearing residual risks is clear? If not, please provide your views, including rationale and alternative terminology that it would be preferable to use.

Response:

Please refer to our response to Q8.

Q5: Do you think that the non-exhaustive list of instruments bearing residual risks should be extended? If yes, which other instruments should be included?

Response:

The Industry believes that the non-exhaustive list should be enhanced using defined criteria. These criteria should identify that instruments which can be replicated by a bounded number of vanilla instruments should not be included. An example of this are digital options since they can be exactly replicated by a linear combination of a spot position and two vanilla options. A simple example is attached to this response to illustrate this.

**Q6: Do you think that the non-exhaustive list of instruments bearing residual risks should be reduced?
If yes, which instruments should be excluded?**

Response:

The Industry recommends removal of Asian options from the scope of RRAO residual risk under point 1 of the Annex. There are no additional risks related to Asian options. This is despite the slightly more complex pricing than under a simple Black-Scholes method since it depends on the full term structure of implied volatility. However, there are no risk management difficulties stemming from this difference.

We therefore consider that Asian options should not be in the scope of a residual risk add-on under Annex point 1 path dependent underlying options.

If the EBA does wish to make Asian options subject to RRAO, it is important to ensure that options which while technically Asian are clearly vanilla do not attract RRAO (as required by CRR325u(2)(b)(i)). Key examples include options on OIS and futures options where the underlying future is cash-settled based on the average spot price observed during the delivery month.

One way of making this exclusion explicit would be to add a new Article 3(f) either:

- explicitly excluding all Asians:
Risk of a path-dependent option where the only source of path-dependence is that the payoff is calculated based on an average price observed over a period of time.
OR
- explicitly excluding only vanilla Asians:
Risk of a path-dependent option where the only source of path-dependence is that the payoff is calculated based on an average price, and some linear products referencing the same average are listed or are eligible to central clearing.

The inclusion of Bermudan options in scope of residual risk under point 6 of the Annex is questionable. Bermudan options are similar to American options, differing only in that the exercise dates are at specified intervals for Bermudan options but on a daily basis for American options. We therefore recommend that Bermudan vanilla options should be out of scope of the RRAO capital charge.

Finally, please also see our response to Q8.

Article 3: Specification of risks that, in themselves, do not constitute residual risks

As indicated in Articles 2 and 3 (and in the Annex of the RTS), and as also explained in detail in the Background section of the CP, the proposed treatment for correlation risk can be summarised as follows:

- As a general treatment, relevant instruments subject to correlation risk include all multi-underlying options (e.g. basket options, best-of-options, spread options, basis options) and those instruments should be in the scope of the RRAO;
- As a specific treatment, plain-vanilla options on index instruments that meet the conditions in Article 325i(3) of the CRR, as amended by the European Commission Delegated Regulation (EU) 2021/424, may be considered out of the scope of the RRAO;
- A similar specific treatment is envisaged for CIUs, in case an option in a CIU is equivalent to a position treated under the point above; Respondents are asked to provide feedback on the clarity of the proposed treatment for correlation risk, including alternatives in case they do not agree with the proposed treatment.

Q7: Do you agree with the proposed approach for the treatment of correlation risk? If not, please provide your views, including rationale motivating your preference for an alternative treatment.

Response:

The Industry recommends that it should be clarified that interest rate (IR) spread options, where the spread is between two maturity points on the same underlying yield curve, are not “multi-underlying options” and should not be subject to the RRAO capital charge.

This would be consistent with the treatment of “plain-vanilla options on index instruments that meet the conditions in Article 325i(3) of the CRR”, as the above-mentioned IR-spread options have the same vanilla characteristics as index options: their payoff is straightforward, and their underlying, the IR spread, is treated as a single bundled underlying, analogously to an index, based on simple and observable information. The traditional instruments in this category are constant-maturity swap (CMS) interest rate spread options.

Furthermore, without this clarification, a strict interpretation of the current requirement leads to the majority of the RRAO capital charge being generated by simple hedging transactions. Penalising straightforward hedging transactions is contradictory to the very purpose of prudential rules, and also introduces an inconsistency within Art. 325u(2), which states in point (ii) that hedges included in the alternative correlation trading portfolio (ATCP) are not subject to RRAO, without a homogenous treatment for the other portfolios included in point (i).

For further details on the use and liquidity of CMS spread options, please refer to our response to Q8.

In these RTS, the EBA provided specific guidance on a number of instruments and risks which trigger or not the conditions in Article 325u(2) of the CRR. However, the EBA acknowledges that additional clarification may be needed for other instruments, not explicitly mentioned currently in the RTS. Therefore, the EBA invites respondents to provide feedback on additional instruments or risks, which can be considered to be explicitly mentioned in one of the parts of the RTS, including rationale motivating such needs.

Q8: Do you think that there are other products, not currently covered in these RTS (e.g. CMS derivatives), which are potential candidates for being covered in one of the parts of these RTS? Please provide your views, including rationale motivating the needs for such inclusions.

Response:

The Industry would like to recommend that the EBA clarify that simple CMS spread options (including caps, floors and swaptions) are vanilla products and hence out of scope of RRAO. At the very least, simple hedging CMS spread options should be exempt from the RRAO charge.

CMS spread options are simple and liquid products

The Industry acknowledges that in general spread options are in scope of RRAO due to the correlation risk, but argues that CMS spread options should be considered plain vanilla instruments and therefore be exempt from the RRAO charge. Indeed, these products have simple payoffs based on the spread between two maturity points on the same underlying yield curve, which is observable and liquid (see example box below).

It is important to note the great utility that these products provide for real money clients, as they are heavily traded by insurance companies and pension funds to hedge their yield-curve risk, in particular in Europe.

The RRAO capital charge is unwarranted for simple CMS spread options

The RRAO requires a blanket charge based on the notional amount and leads to excessive charges for CMS spread products. The severity of the impact for CMS spread options is a consequence of derivative notional convention not taking account of the difference in DV01 (and hence, the quantity of risk) across different interest rate products.

An example illustrates this point. For swaptions, the quantity of risk in a trade scales with the [notional*dv01] of the underlying. Currently, that dv01 ranges from approximately 1bp for a 1y tenor swaption to 23bp for a 30y tail swaption. For a CMS product, the DV01 is fixed at 1bp in all cases. This leads to a wide discrepancy between the notional of a swaption trade and the notional of CMS trade for a given level of risk. Market participants would see approximately the same quantum of risk in a 100 million 10y tenor swaption as in a 1 billion 10y-2y CMS option.

Furthermore, the RRAO penalises simple hedging transactions that are not strictly “back-to-back”, and hence discourages hedging, which is contrary to the very purpose of prudential rules. This is very impactful since it is standard market practice to hedge the market risk of non-vanilla CMS products, which are duly subject to RRAO, with plain vanilla CMS spread options. In addition, several vanilla spread options can be needed to hedge the risk of a long-term non-vanilla CMS product, each increasing the RRAO charge based on their gross notional.

The Industry hence recommends that it should be clarified that simple CMS spread options are vanilla instruments, and therefore are out of scope of the RRAO. Such an exemption avoids vastly inflated RRAO charges on a hedged portfolio vs. the much lower RRAO charge attracted by the unhedged position, as well as the negative unwarranted impacts for end-users.

Example

The below provides an example of a EUR 100m notional 10Y-2Y cap hedged with the most liquid standard market instrument across different counterparties, corresponding to business practice, and illustrates the disproportional capital charge, along with the market liquidity of CMS products.

Example trade and RRAO Impact:

Sell: 20Y EUR100m Notional Multi-look 10Y-2Y Cap (Client)

Buy: 20 x 1Y EUR100m Single-look 10Y-2Y Cap (Hedge)

- **Step 1:** Client purchases EUR100m Notional 10Y-2Y Cap with a strike price of 1% from the Dealer for 20 years.
- **Step 2:** Dealer hedges the client trade with the most liquid standard market instrument by buying 20 x 100m Notional of single look 10Y-2Y Caps.

The below term structure illustrates the 2 trades and the effectiveness of the hedge:

IR Delta				
IR Delta	Client Trade	Hedge Trades		
Expiry	ML	20xSL	Total	
1D	2	0	2	
1M	0	0	0	
2M	0	0	0	
3M	0	0	0	
4M	0	0	0	
5M	0	0	0	
6M	1	-1	0	
9M	0	-50	-50	
1Y	-1,884	1,938	54	
18M	0	-5	-5	
2Y	-3,693	3,754	61	
3Y	1,891	-1,874	17	
4Y	2,935	-2,946	-11	
5Y	3,539	-3,570	-31	
6Y	4,504	-4,609	-105	
7Y	5,087	-5,131	-44	
8Y	4,584	-4,462	122	
9Y	4,319	-4,233	86	
10Y	2,676	-2,785	-109	
12Y	-5,859	5,922	63	
15Y	-11,676	11,652	-24	
20Y	40,644	-40,671	-27	
25Y	-11,159	11,127	-32	
30Y	-32,141	32,173	32	
35Y	2,203	-2,188	15	
40Y	-1	0	-1	
50Y	0	0	0	
60Y	0	0	0	
70Y	0	0	0	
80Y	0	0	0	
Total	5,973	-5,968	5	

Correlation Delta				
Corr Delta	Client Trade	Hedge Trades		
Expiry	ML	20xSL	Total	
9M	35	0	35	
1Y	2,170	-2,214	-44	
18M	41	0	41	
2Y	5,168	-5,158	10	
3Y	8,301	-8,347	-46	
4Y	10,819	-10,869	-50	
5Y	13,530	-13,530	0	
6Y	15,709	-15,581	128	
7Y	16,380	-16,429	-49	
8Y	16,775	-16,723	52	
9Y	16,812	-16,809	3	
10Y	25,532	-25,639	-107	
12Y	43,791	-43,725	66	
15Y	71,849	-71,899	-50	
20Y	54,225	-54,271	-46	
Total	301,136	-301,196	-60	

IR Vega							
IR Vega	Client Trade			Hedge Trades			
	Multi-Look			20xSingle-Look			
Maturity	2Y	10Y	Total	2Y	10Y	Total	Total
9M	25	-77	-51	0	0	0	-51
1Y	2,261	-6,409	-4,148	-2,294	6,500	4,206	58
18M	12	-49	-37	0	0	0	-37
2Y	2,315	-8,298	-5,983	-2,327	8,312	5,985	2
3Y	732	-8,251	-7,519	-730	8,275	7,545	26
4Y	-599	-8,084	-8,684	604	8,106	8,711	27
5Y	-1,090	-7,986	-9,076	1,090	7,986	9,076	0
6Y	-1,365	-7,678	-9,043	1,357	7,625	8,982	-61
7Y	-1,250	-7,807	-9,058	1,252	7,818	9,071	13
8Y	-1,379	-7,971	-9,350	1,374	7,949	9,323	-27
9Y	-1,549	-8,259	-9,808	1,551	8,250	9,802	-6
10Y	-2,122	-13,228	-15,350	2,131	13,277	15,408	58
12Y	-3,433	-25,189	-28,622	3,429	25,154	28,584	-38
15Y	-4,798	-50,645	-55,443	4,801	50,674	55,474	31
20Y	-4,260	-48,395	-52,655	4,264	48,443	52,707	52
Total	-16,502	-208,325	-224,827	16,504	208,370	224,873	46

The total gross notional of this near-flat position (see above tables) is EUR2.1m
→ RRAO charge = EUR2.1m at trade inception.

Using a 10% annual cost of capital, over a 20y maturity, and allowing for hedging position roll-off, gives a lifetime cost of capital (LCoC) of (1.1m* x 10% x 20) EUR2.2m, or 220bps on the original client trade accommodating for hedging rollovers, which renders this activity uneconomic.

* While the initial RRAO charge is 2.1 m, the average through the lifecycle charge is 1.1m

The total gross notional of this near-flat position (see above tables) is EUR2.1bn
→ RRAO charge = **EUR2.1m** at trade inception.

Using a 10% annual cost of capital, over a 20y maturity, and allowing for hedge position roll-off, gives a lifetime cost of capital (LCoC) of $(1.1m \times 10\% \times 20) =$ **EUR2.2m**, or 220bps on the original client trade accommodating for hedge rollovers, which renders this activity uneconomic.

* While the initial RRAO charge is 2.1 m, the average through the lifecycle charge in this example is 1.1 m.

Liquidity

The below table illustrates broker quote counts for selected IR products. (Data from Jun'19 to Feb'20 by month.) This demonstrates that the Market liquidity of CMS spread options is in line with other 'vanilla' products.

Count of BidAsk	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Total
BermudanAccreter	16	34	9	14		18		106	18	215
BermudanSwaption	5	12		31	1	35	70	112	52	318
CallableBermAccreter	277	211	217	147	285	270	191	510	151	2,259
CallableBulletBerm	167	261	77	124	73	128	110	161	75	1,176
CallableEuropeanAccreter		24		8						32
CMSSpreadSingleLook	1,137	953	1,028	794	1,041	862	973	1,184	345	8,317
IRCapFloor	257	244	126	139	190	106	209	263	105	1,639
IRSwaption	4,560	4,700	4,496	4,057	5,176	3,998	4,094	5,378	1,243	37,702
Swaption	278	463	463	337	366	423	263	366	116	3,075

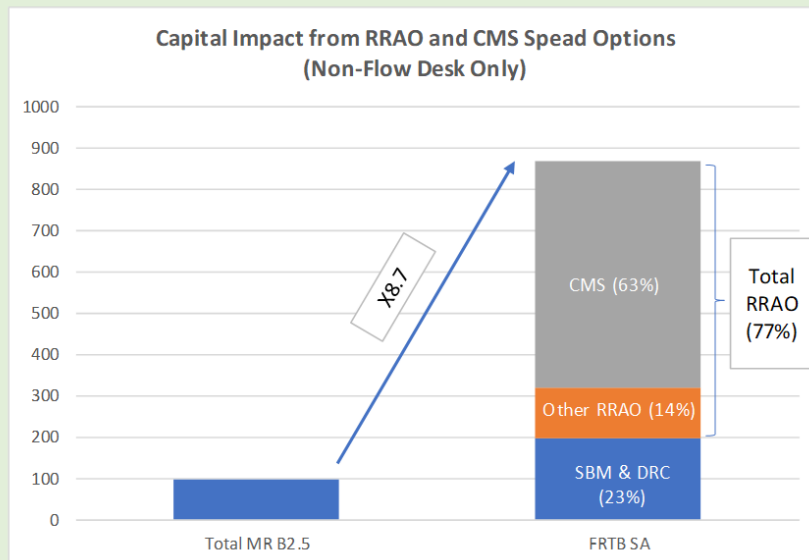
Count of TradedPrice	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Total
BermudanAccreter		26	8				2	2	14	52
BermudanSwaption	3	4	2	17	2	2	17	7	9	63
CallableBermAccreter	53	49	17	16	35	26	21	50	56	323
CallableBulletBerm	21	34	5	32	19	12	15	10	1	149
CMSSpreadSingleLook	132	125	73	109	78	127	145	97	31	917
IRCapFloor	102	223	62	37	120	105	60	97	63	869
IRSwaption	2,981	2,990	3,058	2,991	3,514	2,850	2,084	3,682	1,124	25,274
Swaption	97	92	109	67	79	73	75	90	10	692

Industry Quantitative Survey Results

The survey conducted by banks provided data on CMS spread options and demonstrates that this is a key concern as it attracts 57% of the total RRAO capital charge (based on a median estimate).

In addition to this, data was provided for structured desks within banks which heavily trade these products and are even more severely affected.

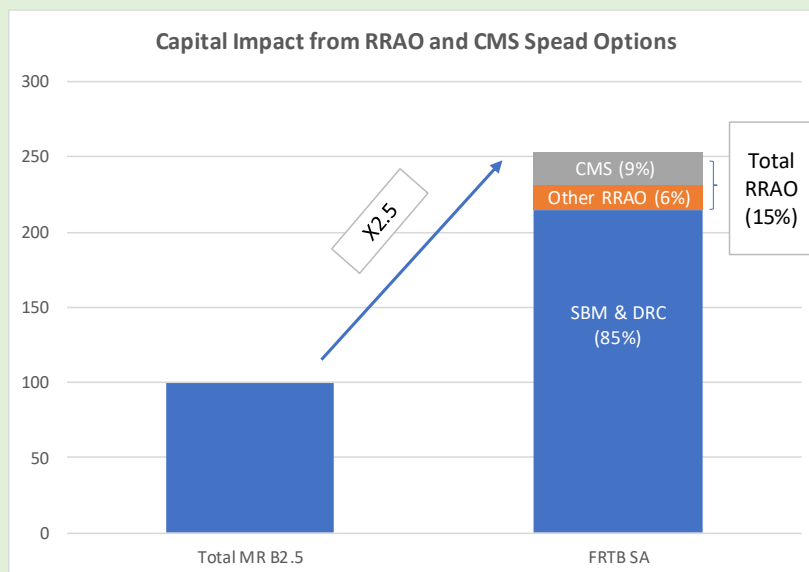
The residual risk add-on is meant by definition to capitalise secondary risks not captured otherwise, while SBM and DRC should capitalise the primary risks. It is therefore expected that the residual risk add-on be less material than the SBM and DRC charges. However, for CMS spread options, the RRAO dominates their capital charge, and furthermore for non-flow interest rate desks represents 87% of their RRAO capital charge (based on median estimates). This highlights the very unwarranted application and calibration of the RRAO capital charge for CMS spread options, which are simple and liquid products, and hence the high extent to which the current RRAO rules threaten the economic viability of respective businesses. The below graph illustrates the excessive RRAO contribution to the total SA-FRTB capital requirement for non-flow interest rate desks, as well as a comparison to the current capital levels under Basel 2.5.



**Percentages in the above chart are proportions of the total FRTB SA capital charge for a Non-Flow Desk*

It can be seen that the RRAO increases the capital level for the CMS non-flow desk by about 870% of Basel 2.5 desk level capital (based on a median estimate). Although some exposure to RRAO is to be expected the size of the impact clearly illustrates issues with the calibration of RRAO for CMS options. For those non-flow desks the contribution of CMS spread options is 87% of the total RRAO and 63% of the total SA desk charge (based on a median estimates).

Investigating the issue on a broader scale shows that the impact is still visible in firm-level capital charges as visualized in the chart below.



**Percentages in the above chart are proportions of the total FRTB SA capital charge*

The above graph provides a visual illustration of the impact to Market Risk capital from Basel 2.5 to FRTB SA for those banks who provided data within the survey at 2.5x the current Basel 2.5 capital level ⁴(based on a median estimate).

In addition, (using a median estimate) the graph illustrates the proportion of the FRTB SA capital associated with RRAO as 15% and furthermore the proportion of the RRAO charge associated with CMS Spread Options as noted above is significant at 57% of the RRAO and 9% of the overall total FRTB SA charge.

⁴ This includes both IMA and Standardised Pillar 1 Market Risk RWA