Response to Consultation Paper EBA/CP/2022/11

Alantra, October 2022

Please find below our responses to the questions raised in the EBA Consultation Paper EBA/CP/2022/11 regarding Draft Regulatory Technical Standards concerning the specification of the exposure value of synthetic excess spread pursuant to Article 248(4) of Regulation (EU) 575/2013 as amended by Regulation (EU) 2021/558.

Background

The recently published consultation paper by the EBA regarding the determination of the appropriate exposure amount for synthetic excess spread ("SES") in synthetic securitisations[1] (the "Consultation Paper" or "Paper") contemplates two main methodologies. In the simplified approach, the exposure amount determined for SES is calculated as the annual SES amount multiplied by the remaining weighted average life ("WAL") of the transaction (capped at 5 years), multiplied by a scalar factor. In the case of so-called Use-It-Or-Lose-It ("UIOLI") SES, the scalar factor is proposed to be set at 0.8, otherwise at 1.0. The full model approach calculates the exposure amount of SES by modelling the amount of SES that will be applied to cover expected losses using the average over three loss distribution scenarios (even, front loaded and back loaded).

General Comments

We note that the relative benefit (in terms of reduction in exposure amount) of UIOLI SES as opposed to "trapped SES", where SES is retained for the life of the transaction to absorb future losses, is very sensitive to fluctuations in the level of realised losses over the life of the transaction (or up to the 5-year point, as is used in the Paper), and this sensitivity to fluctuation is not adequately captured in the use of three scenarios. Analysis using both Monte Carlo simulation and close-form calculations of the effective use of UIOLI SES as compared to "trapped SES" under realistic assumptions regarding the magnitude of fluctuations of realised losses around the average Expected Loss ("EL") value, show both that lower values for the scalar are justified, and also that the use of the three scenarios in the Full Model case is unrealistically conservative. Please note that we provide details about our calculations and the mathematical approach and formulae behind it in a "Technical Annex: Mathematical Model" at the end of this document.

Further, since the degree of fluctuations of realised losses around the EL is directly related to the magnitude of Unexpected Losses, and given that there are precedents for the Standardised Risk Weights to be used as proxies to provide reasonable calibrations of Unexpected Losses, it is possible to determine appropriate levels of fluctuation, and hence values for the scalar, that are consistent with Risk Weights. This shows that, in order to achieve consistency with Standardised Risk Weights, lower values of the scalar, below 0.6 in most cases, should be applied[2].

Conclusion

The use of three equally weighted scenarios (evenly-, front-loaded and back-loaded) is overly simplistic in determining appropriate values for exposure of UIOLI SES and significantly over-states the capital requirements versus calibration against fluctuation of realised losses taking account of

[1] EBA/CP/2022/11
[2] The equivalent analysis for IRB Risk Weights would depend on their specific values.

the implied magnitude of unexpected losses consistent with standardised risk weights. Standardised risk weights imply a considerably greater degree of fluctuation, lower utilisation of UIOLI SES than the equally weighted scenarios imply, and hence that lower exposures amounts would be appropriate. Alternative sets of scenarios with more appropriate calibration would be more consistent with the regulatory framework and would appropriately estimate the exposure associated with UIOLI SES in a readily calculable way. The proposed alternative sets of scenarios would be consistent with a value of 0.6 for the scalar in the simplified approach. It is worth noting that it is challenging to observe this in empirical observation of historical data, because of the rarity of the extreme events driving the tail of the distribution; however, there are indications that under crises losses are a multiple of expected losses.

The use of 0.8 as the scalar in determining the exposure amount for UIOLI SES is inappropriate, because it would imply a lower level of fluctuation than would be consistent with the calibration of standardised risk weights.

Responses to Consultation Paper Questions

Q1. *Do respondents find the provisions clear enough or would any additional clarification be needed on any aspect?*

No particular clarification is required in our view.

Q2. *Do you agree with the possibility of choosing between the full and the simplified model approaches in a consistent manner?*

i. We agree with the principle of permitting choice between the full and simplified model approaches, but further consider that originator institutions ought to be permitted to choose which approach to apply on a per asset class basis, rather than being obliged to make a binding decision for all securitisations for a given period.

   This would be analogous to the permissions for IRB models being made on a per exposure class basis, as described in Article 143 of CRR, for similar reasons reflecting the abilities of the institution to appropriately model the relevant asset class to the prescribed level. We observe that the Explanatory Memorandum to the proposal for a regulation, COM(2021) 664, notes that:

   > *"Under the final Basel III standards, the adoption of the IRB approaches for one exposure class by an institution is no longer conditioned to the fact that all the exposure classes of its banking book should eventually be treated under the IRB approach ('IRB roll out') except for those exposures for which a permanent partial use (PPU) of the SA-CR is permitted by the rules and approved by the competent authority. This new principle is implemented in Articles 148 and 150, allowing institutions to apply the IRB approaches selectively."*

   It would therefore be consistent with CRR for similar flexibility to be granted on a per asset class basis in this context.

ii. The requirement for an annual independent review (as described in Article 2, para. 4) seems unduly onerous where the Originator institution applies the simplified model approach. As the text of Article 2 is drafted, it appears that para. 4 applies to all limbs of para 2., including limb (b) referring to the simplified model approach. We propose that the simplified model approach is carved out from the application of para. 4 and that no independent review is required in such case.

Q3. *Instead, would you favour that the RTS consider only one method (i.e. the full model approach or the simplified model approach) for the calculation of the exposure value of the synthetic excess spread of the future periods?*

No.

Such a restriction would be unduly limiting and would either undermine the potential for originators to apply the more risk sensitive full model approach where possible, or present substantial challenges to institutions unable to efficiently apply the full model approach.

Q4. *Do you agree with the specifications of the asset model made in Article 3?*

The level of detail prescribed for calculations of asset cashflows in Article 3, para. 1 and 2 is greater than is typically set elsewhere for comparable tasks and does not reflect the full range of technical approaches which banks may apply to project asset cashflows whilst taking into account proportionality of complexity relative to precision and accuracy. This text as drafted may require a disproportionately onerous and computationally intensive effort to achieve modelling in line with the prescription, under circumstances where a substantially simpler approach would yield almost identical results. We consider the framework established in the EBA guidelines for calculation of Weighted Average Maturity (EBA/GL/2020/04, the "WAM Guidelines"), which is already widely taken into account by institutions, to be suitable for describing the manner of projection of asset cashflows.

The requirement in para. 6 that prepayments are not taken into account, is overly conservative in circumstances where there is robust historical evidence of prepayment rates. Adopting the approach taken in para. 32 of the WAM Guidelines, which permits some prepayments to be taken into account in the presence of 5-year historical data, would be more reasonable in our view.

Q5. *Do you agree with the specifications for the determination of the relevant losses made in Article 5?*

Although we broadly agree with the specifications for the determination of the relevant losses made in Article 5, we note that under IFRS 9, for Stage 1 assets (i.e. those assets neither in default, nor subject to a significant increase in credit risk) the Expected Credit Loss amount that contributes to the provisions (and hence which would be characterised as new specific credit risk adjustments) only takes account of a 12 month horizon rather than the whole lifetime, and hence it is an inconsistency between the financing reporting framework and regulatory framework to apply those amounts on a lifetime basis.

We also note that CRR does not impose capital requirements for expected losses in any other circumstances. We see it as a basic principle of prudent banking that expected losses are covered by the excess of interest income over costs (excess spread) with unexpected losses are covered by equity capital. We further note that CRR does not require that banks hold capital against expected losses from unsecuritised exposures.

Q6. *Do you agree with the calculation of the exposure value of synthetic excess spread for future periods made in Article 6?*

No.

We consider that the specific scenarios applied with equal weight (front-loaded, back-loaded and evenly-loaded) suffer from a number of shortcomings rendering them flawed and overly conservative, particularly in the context of UIOLI SES.

The estimation of utilisation (and hence appropriate exposure amount) of UIOLI SES is sensitive to the magnitude of year-on-year fluctuations of realised losses around the average expected loss value; greater fluctuations result in lower levels of utilisation and hence exposure. The degree of fluctuations present in the scenarios proposed is substantially lower than that which would be expected on the basis of:

i. Historical observations of variability on credit performance

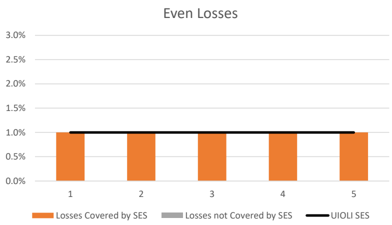
ii. The general principle that credit risk is 'thick-tailed' whereby rarer and more extreme events are important in appropriate representations of credit risk (which is widely accepted as a theoretical principle, and supported by numerous analyses)

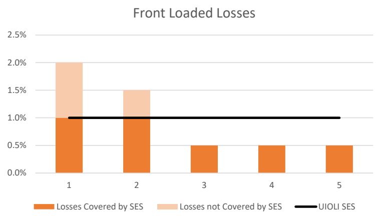
iii. The calibration of standardised risk weights under CRR (and Basel rules) from which a substantially higher level of fluctuation can be inferred as being consistent with the regulatory framework

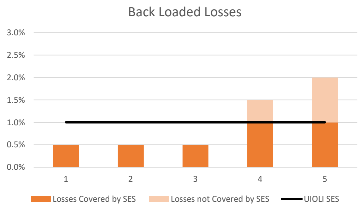
See the following technical materials for further details supporting this from a theoretical basis, with some illustrative examples.

Fluctuations of Losses and Utilisation of SES

By way of illustration, consider a transaction with 5y bullet assets, with a 1% annual EL, and 1% UIOLI SES. Under the scenarios proposed by the Paper, the projected utilisation of the SES can be illustrated as follows:

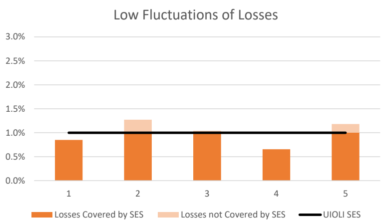


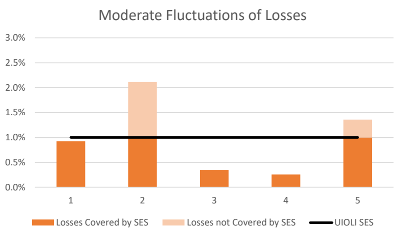


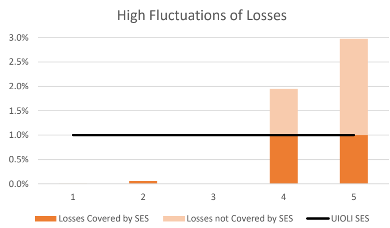


It is easy to check that in these scenarios the proportion of SES used is, respectively, 100%, 70% and 70%, and applying equal weighting, this does indeed result in an average of 80% which would appear to support the use of the 0.8 scalar.

Applying some random variation to the realised losses, generating fluctuations whilst still having similar total losses over the transaction life, additional scenarios can be generated[3] with low, moderate and high levels of fluctuation of losses:





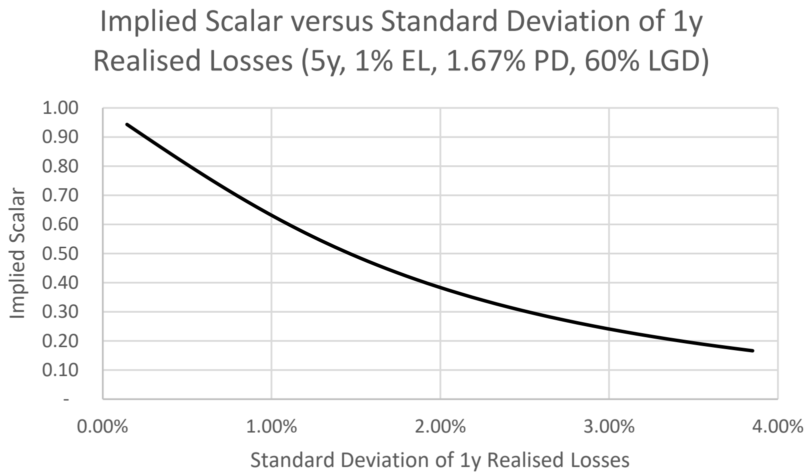


For these illustrative examples, in the low case, 90% of the SES is utilised, whereas in the moderate case, 71% is, and in the high case, 41%.

The reason for this sensitivity to the level of fluctuation is that when the realised losses in a year under-shoot the available SES, the remaining unutilised SES is discarded and not subsequently available, whilst any excess of annual realised losses over the available SES are not covered by the SES. The greater the level of fluctuations, the more under-shoot (and over-shoot) will occur for the same level of EL, and hence the less SES is expected to be utilised.

[3] The model used to generate these fluctuations is a gamma-distribution based model described in more detail in the Appendix section

Constructing a simple mathematical model for fluctuations of losses permits the calculation of a chart such as the following, which illustrates the relationship between implied Scalar (i.e. the expected utilisation of the SES divided by the Simplified SES calculation) in the case of a 5y bullet portfolio with 1% per annum EL and 60% LGD. Similar charts can readily be created for portfolios with other characteristics, but their general appearance would be similar.



From this chart it can be observed that the 0.80 scalar is equivalent to a standard deviation of realised annual losses of approximately 0.45% representing 45% of the expected annual losses. Whilst this represents a significant proportion of the expected annual losses, it is rather low compared to typical calibrations of loss distributions, in that it would result in a distribution that is relatively un-skewed with small tail losses, which could be considered unreasonably optimistic about the rarity of extreme credit events.

Therefore, the prescribed scenarios are overly conservative and results in higher exposure amounts for UIOLI SES than can be reasonable justified. This analysis is continued in our response to Q7 below.

To provide some intuition regarding the shape of annual realised loss distributions for different standard deviations, see the following charts that illustrate the shape of the distribution, the location of the median and 99% quantile (1 in 100 events) for various parameter values. Note that for low standard deviations, the distribution resembles a well-known, one-humped shape, with tails tending to zero at small and high levels of losses. As the standard deviation increases (as a proportion of the expected value, or mean) the distributions become increasingly skewed with a more pronounced peak at very low levels of loss, and a longer tail into higher levels of loss, with an increased likelihood of extreme events. This reflects that probabilities cannot be negative, hence this is the only way to generate increased dispersion. It is worth recalling that it is widely believed that, in practise, credit events are heavily skewed, with the average (expected) loss on a portfolio being heavily influenced (even dominated) by rare, extreme events, such as the crises of 2007-2009. Under such circumstances the realised losses can exceed average expected losses by a multiple of 3 (or more)[4] and hence there is some justification for expecting realistic loss distributions to have heavily skewed tails.

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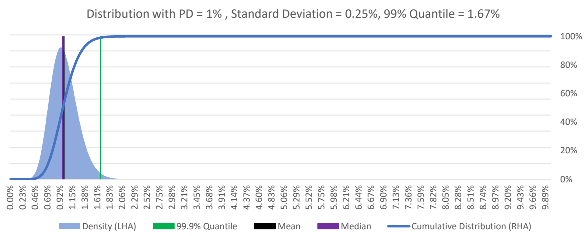
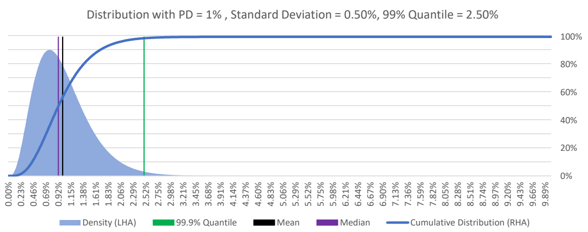
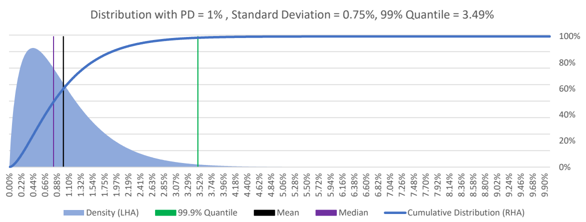
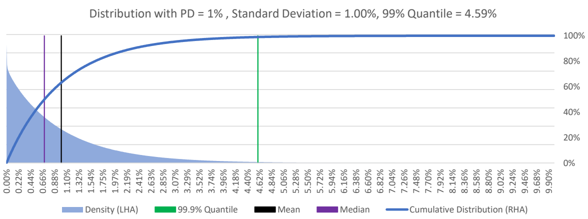
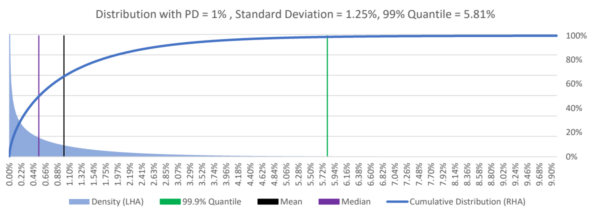
[4] For example: (i) S&P historical data on defaults shows that peak defaults in investment grade names in 2002 and in 2008 were more than 4x the historical average (data available here: https://www.spglobal.com/ratings/en/research/articles/210407-default-transition-and-recovery-2020-annual-global-corporate-default-and-rating-transition-study-11900573); (ii) Moody's historical data on defaults shows that

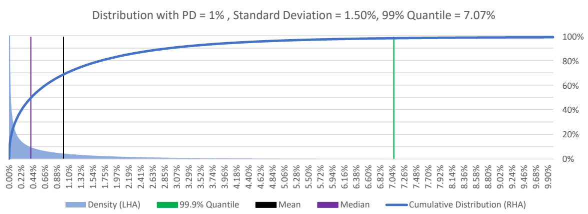


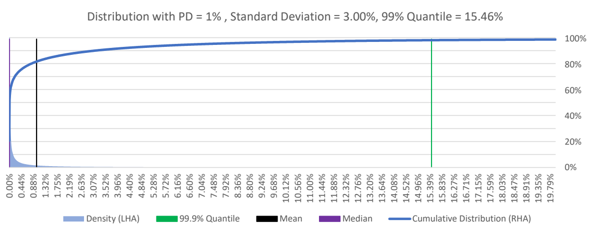


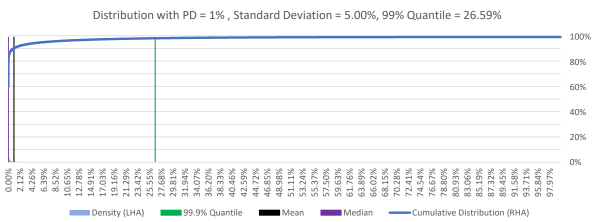












Q7. *Shall the average of the scenarios be made in a different way for UIOLI and trapped mechanisms (e.g. back-loaded and evenly-loaded only for UIOLI mechanisms, and front-loaded and evenly-loaded for trapped mechanisms)?*

As mentioned in our response to Q6, the sensitivity under the UIOLI mechanism to fluctuations in annual realised losses means that a different treatment would be more appropriate specifically for the UIOLI case.

The objective of creating a calibration that is consistent with the risk weight framework would require that the probability distribution of realised losses (over one year) has a standard deviation comparable to the expected loss (e.g. a standard deviation of 1% in the charts above), as is elucidated below. Therefore, we propose two alternative collections of scenarios which are reasonably easy to specify, and are similar to those described in the consultation paper, but which have more consistent properties, which we summarise as follows and set out in more detail below.

i. A collection of six scenarios, for five of which 7/9 of the total expected losses are applied over 2/9 of the expected maturity in various profiles plus one evenly loaded scenarios

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peak defaults in speculative grade bonds in 2009 were more than 3x the historic average, and for all corporate bonds were more than 4x their historical average with smaller peaks exceeding 2.5x in both 1991 and 2002 (data available here: https://www.moodys.com/research/April-2022-Default-Report-Excel-Data--PBC_1329340)

ii. A collection of three scenarios, front-loaded, back-loaded and evenly-loaded, but where the front- and back- loaded apply 4/5 of the total expected losses over the first/last fifth of the expected maturity.

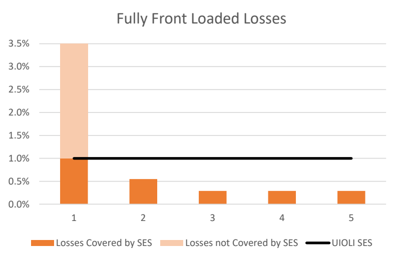
Each of these would provide a more realistic and appropriate treatment.

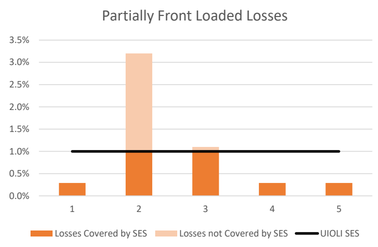
Detailed specification of these proposals are as follows:

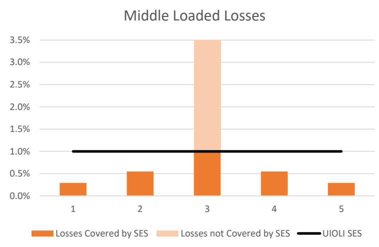
<u>Proposal 1</u>

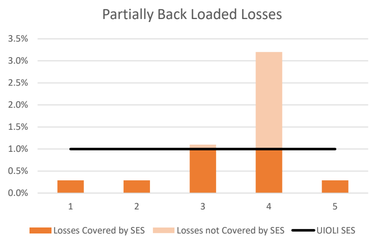
Scenario Name	Description
1. Fully Front Loaded	7/9 (78%) of the total expected losses expected to occur during the expected maturity are equally spread over the first 2/9 (22%) of such expected maturity, with the remaining 2/9 of the expected losses spread over the remaining 7/9 of the expected maturity
2. Partially Front Loaded	7/9 of the total expected losses expected to occur during the expected maturity are equally spread over the second 2/9 of such expected maturity, with the remaining 2/9 of the expected losses spread over the remaining 7/9.
3. Middle Loaded	7/9 of the total expected losses expected to occur during the expected maturity are equally spread over the middle 2/9 of such expected maturity, with the remaining 2/9 of the expected losses spread over the remaining 7/9
4. Partially Back Loaded	7/9 of the total expected losses expected to occur during the expected maturity are equally spread over the penultimate 2/9 of such expected maturity, with the remaining 2/9 of the expected losses spread over the remaining 7/9
5. Fully Back Loaded	7/9 of the total expected losses expected to occur during the expected maturity are equally spread over the last 2/9 of such expected maturity, with the remaining 2/9 of the expected losses spread over the remaining 7/9 of the expected maturity
6. Evenly Distributed	As per the Consultation Paper

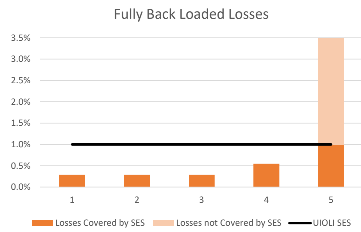
For a transaction with 5y bullet assets, with a 1% annual EL, and 1% UIOLI SES, the projected utilisation of the SES for these scenarios can be illustrated as follows:

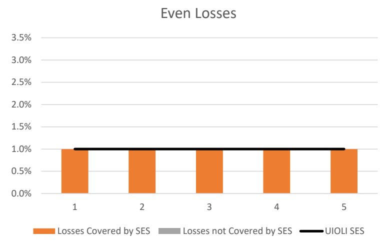












Each of these scenarios has total losses equal to the expected loss, but the standard deviation of annual losses is close to the expected loss (about 1%) which is more consistent with regulatory expectations of unexpected losses (see comparison with risk weights below). Another way to compare these scenarios to those proposed in the Paper, is that the standard deviation of annual realised losses implicit in the Paper, is only about 50% of the annual expected loss, which is substantially lower than would be consistent with broader regulatory expectations.

<u>Proposal 2</u>

Scenario Name	Description
1. Front Loaded	4/5 (80%) of the total expected losses expected to occur during the expected maturity are equally spread over the first 1/5 (20%) of such expected maturity, with the remaining 1/5 of the expected losses spread over the remaining 4/5 of the expected maturity
2. Back Loaded	4/5 of the total expected losses expected to occur during the expected maturity are equally spread over the last 1/5 of such expected maturity, with the remaining 1/5 of the expected losses spread over the remaining 4/5 of the expected maturity
3. Evenly Distributed	As for the Consultation Paper

These scenarios are obviously simpler and less diverse than those in Proposal 1, but are more similar in construction to those in the Paper. The standard deviation of annual losses in this case is slightly higher than the expected loss, and hence this option would be marginally less prudent than Proposal 1.

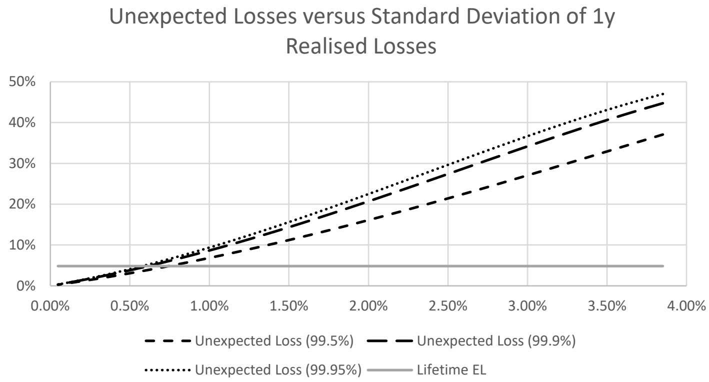
The average utilisation of SES for both of these proposals across these scenarios is approximately 0.60, and hence a scalar of 0.60x for the simplified approach would be appropriate in order to be consistent with these scenarios.

Fluctuations of Losses and Lifetime Unexpected Losses

The level of fluctuation of losses modelled or assumed in a portfolio also directly impacts the determination of unexpected losses; the greater the degree of fluctuations, the greater the projected quantum of unexpected losses, because unexpected losses represent the degree to which realised losses over the lifetime may exceed the EL. Holding the EL constant, increasing fluctuations will both increase the likelihood of under-shoot or over-shoot of the EL, both for individual years, and over the life of the transaction.

A widely used measure for unexpected loss is the amount by which a certain quantile of the lifetime loss distribution exceeds the EL. This is equivalent to looking into the adverse tail of the distribution of losses.

Again, considering the case of a 5y bullet portfolio with 1% per annum EL and 60% LGD, the following chart shows the relationship between the standard deviation of 1y realised losses and lifetime unexpected losses at 99.5%, 99.9% and 99.95% levels, derived mathematically for the relevant distributions. Note that for higher levels of fluctuation the unexpected loss quantiles can substantially exceed the expected loss level, as would be expected, since this represents the predominance of unexpected adverse events in reflecting credit risk.



Fluctuations of Losses, Lifetime Unexpected Losses and Risk Weights

The risk weights assigned by the Basel Rules and Capital Requirements Regulation[5] are intended to reflect capital requirements so as to permit credit institutions to absorb unexpected losses without putting depositors (or other preferential lenders) to the entity at risk. In particular, the guidance provided by the EBA for undertaking calculations relating to unexpected losses for SRT purposes, suggests using the standardised risk weight multiplied by 8% as a means of estimating unexpected losses[6]. Elsewhere, there are regulations stipulating that it is appropriate to consider risk weights as reflecting a 99.9% quantile of the lifetime loss distribution[7], which we view as a sensible measure to quantify and describe the adverse tail risk in a distribution of losses.

Therefore, the following relationship between standardised risk weights and unexpected losses holds:

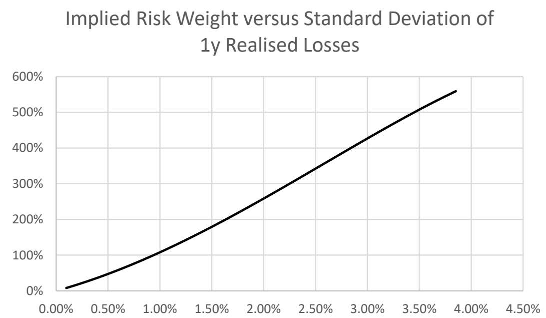
$$\text{Quantile}(99.9\%) \approx 8\% \times \text{Risk Weight}$$

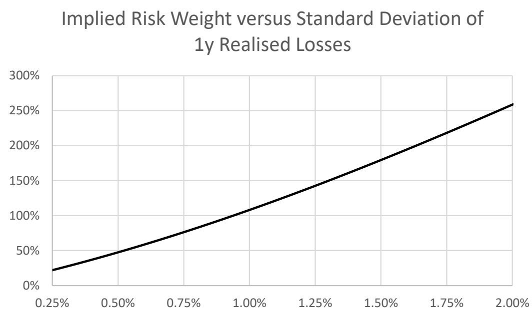
Or alternatively

$$\text{Quantile}(99.9\%) \times 12.5 \approx \text{Risk Weight}$$

Applying this to the data underlying the chart illustrated above, shows the following relationship between standard deviation of realised loss and risk weight for the 5y portfolio considered, where the second chart shows a smaller portion of the graph:

[5] EU Regulation 575/2013 as subsequently amended ("**CRR**")
[6] E.g. paragraph 172 of EBA-DP-2017-03
[7] E.g. CRR Article 153(1)(iii)





We can see that a 100% risk weight is consistent with fluctuations in annual losses represented by a standard deviation of approximately 1.00%, which is roughly the same as the expected loss, and therefore the distributions and sets of scenarios (and the value of the scalar) described above are calibrated so as to be consistent with the risk weights.

***Q8.** Do you agree with the specification of the simplified model approach made in Article 7?*

Yes.

The general framework for the simplified model approach is reasonable (although we disagree about the calibration of the scalar – see Q10 below).

***Q9.** Do you consider that the formula can be further simplified (e.g. by using the maturity of the credit protection multiplied by a conservative scalar instead of WAL)?*

No.

Further simplification would present a substantial risk that, due to the heterogeneity of potential amortisation profiles, no single treatment could be expected to be appropriate for the range of transactions in scope.

***Q10.** Do you agree with the scalar assigned for UIOLI mechanisms? If not, please provide empirical evidence that justifies a different scalar based on the different loss absorbing capacity of UIOLI vs trapped mechanisms.*

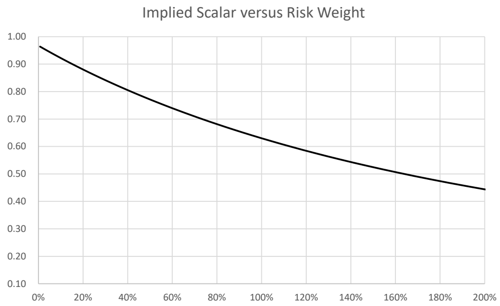
We agree that transactions with a UIOLI mechanism should have preferential treatment versus transactions with a trapping mechanism.

Taking account of a more realistic assessment of the fluctuation of realised annual losses versus expected losses, as outlined in our responses to Q6 and Q7, and as described in more detail above and below it can be calculated that a scalar of around 0.60 would be consistent with risk weights and our proposed alternative sets of scenarios. This would reflect the standard deviation of fluctuations in annual losses being approximately equal to expected losses.

Risk Weights and Implied Scalar

Putting together the relationship between risk weights, unexpected losses, fluctuations in realised losses, and the determination of appropriate values of the UIOLI SES scalar, it is possible to infer the relationship between risk weight and SES scalar for any particular portfolio (based on term, annual

PD, LGD etc.), in order to reflect consistent expectations about the underlying statistical behaviour of the portfolio. The following chart illustrates this:



This shows that the 0.8 scalar would be consistent with a 40% risk weight on the underlying portfolio, whereas for a 100% risk weight (which applies to many categories of exposure under the standardised approach) the appropriate scalar would be close to 0.6.

Carrying out equivalent calculations for a range of portfolio terms and ELs (in each case assuming bullets and 60% LGD) gives rise to the following estimates for appropriate scalars consistent with 100% standardised risk weights:

Term (years)	**Annual Expected Loss**			
	0.25%	**0.5%**	**1.0%**	**1.5%**
2	0.22	0.42	0.59	0.67
3	0.24	0.44	0.61	0.68
5	0.25	0.46	0.62	0.68
10	0.30	0.51	0.66	0.72

As can readily be seen, all of these are smaller than 0.8, and in the case of the lower EL portfolios, substantially lower, indicating that the use of a single 0.80 value for the scalar is inconsistent with the calibration of unexpected loss implied by standardised risk weights.

Q11. *Regarding the current supervisory practices on SES, described in paragraph 9 of the background section, the question is whether these practices could be adapted while keeping them aligned with the amended regulation, and the relative impact they would imply in comparison with the approaches included in the draft RTS. One way to try to further adapt the current supervisory practices on UIOLI SES to the provisions of the amended regulation could be by taking into account the part that is expected to cover for losses in the next period instead of the part that it is not, including at issuance of the transaction, keeping the rolling-window approach.*
Would you favour that approach? If so, how do you think that this rolling-window approach for calculating UIOLI SES will affect the efficiency and viability of synthetic transactions in comparison with the current supervisory practices? Please justify your response with specific illustrative examples or data.

We would favour the modified rolling window approach described over the other two approaches put forward in the Paper.

If it is necessary to reflect a capital requirement for SES (and note our response to Q12 wherein we explain why this is entirely inconsistent with the approach applied for traditional securitisations), then a variant on the rolling window approach to be somewhat aligned with current supervisory practise would be amongst the least unreasonable options, and would appropriately reflect prudential regulatory objectives, whilst not unduly penalising originators.

We are aware of several transactions recently executed where the commercial decision making by the originator anticipated that the future RTS referred to in Art. 1 (2) (b) of Regulation 2021/558 would propose an approach very similar to the modified rolling window approach when assessing the magnitude of capital savings and the life-time cost of the transaction. For these transactions, the application of such a modified rolling window approach would not have a significant, adverse impact on the efficiency or viability of the transaction, as compared to the commercial assessment already undertaken. The implementation of either the full or simplified model approaches as described in the Consultation Paper would render these transactions materially less attractive and, in all likelihood, would have prevented the transactions from taking place.

Q12. *Do you agree with the treatment of the ex-post SES of future periods in the RTS? If not, please provide rationale and data supporting your views*

We do not agree with the treatment of ex-post SES in future periods.

It is inconsistent with the treatment of loans held on balance sheet, and of loans in traditional securitisations, to adopt this approach.

Paragraph 8(ii) of the Consultation Paper justifies the proposed approach with the sentence:

> *"The reason is that, by contrast to a traditional securitisation, the securitised exposures in case of a synthetic securitisation remain on the balance sheet of the originator and their future proceeds will continue to be recorded in the income statement of the originator."*

The statement is factually incorrect on several grounds.

First, there is no reason to expect that, in a traditional securitisation, the securitised exposure ceases to be on the balance sheet of the originator (for financial reporting purposes). Certainly, it is possible for a traditional securitisation (which achieves significant risk transfer) to result in derecognition and deconsolidation of the exposures for financing reporting purposes, but this is by no means certain. The rules regarding derecognition and deconsolidation for financial reporting purposes under IFRS are complex, but in simple terms, depend on questions around control as well as around risk and reward. Control in traditional securitisation transactions is typically considered in terms of control of the servicer, whereas risk and reward is typically determined with reference to the variability of the present value of the cashflows received by the originator. Therefore, it is entirely possible for a traditional securitisation to be on-balance sheet for financial reporting purpose (even if it is derecognised for prudential regulatory purposes) if the servicing is entirely retained by the originator, or if a substantial proportion of the risks and rewards are retained, for example, by retention of a substantial portion of the first loss tranche. Therefore, there is no logical reason to distinguish between traditional and synthetic securitisations on the basis of whether the assets remain on the balance sheet (for financial reporting purpose) of the originator, since they may remain in both cases.

Second, since a traditional securitisation may be treated as consolidated for financial reporting purposes, the future proceeds for cashflows from the underlying assets would in those cases flow directly to the income statement, just as they do for a synthetic securitisation. Again, in such an instance there is no contrast between a traditional securitisation and a synthetic securitisation. In both cases the future proceeds (and, in particular, the net interest margin or excess spread) would be recorded on the income statement.

Therefore, there is no justification for distinguishing between traditional securitisations and synthetic securitisations from this perspective, and hence there are no rational grounds for the differentiation in treatment of excess spread providing credit enhancement to the transactions.

Noting this point, we believe that a reasonable option would be to limit the exposure attributed to SES to the amount of SES (if any) that exceeds the amount of excess spread that would be available for credit enhancement in an analogous traditional securitisation subject to the prevailing market rates at transaction inception. With this proposal, the originator institution would be required to model a hypothetical traditional securitisation as well as the actual synthetic securitisation and determine the excess spread that would be available period by period. From these models the amount by which SES available in the synthetic securitisation exceeds the excess spread in the analogous traditional securitisation in each period can be calculated. The total such excess of SES over hypothetical traditional securitisation excess spread over the life of the transaction until the expected maturity (subject to the usual 5y cap) would then be an appropriate measure of exposure for the SES and would not be inconsistent with the treatment of traditional securitisations.

Q13*.Do you have any other comments on these draft RTS?*

The proposed changes to regulatory treatment of SES disproportionally impact potential transactions with significant annual expected losses, since it is only for such transactions that SES (which is typically capped at expected losses anyway) is of significant benefit. This means that it disproportionately penalises potential transactions for asset classes and in jurisdictions with higher expected losses, and hence disadvantages institutions holding such assets. As a result, precisely those institutions holding lower quality (i.e. higher expected loss) assets would find themselves less able to utilise synthetic securitisation as a tool for effective risk and capital management. Not only would this disadvantage those institutions within the European banking system which would benefit most from the use of synthetic securitisation as a tool, but it would also disproportionately impact those institutions in European countries where the prevailing credit quality of assets is lower. Further, due to differences in legal framework, there are some jurisdictions within Europe within which traditional securitisation is more onerous or challenging than in others, due to difficulties in achieving a satisfactory degree of bankruptcy remoteness in the transfer of assets, and for institutions in such jurisdictions, the availability of synthetic securitisation provides a crucial tool in establishing a level playing field with those in jurisdictions against such obstacles. It is hard to see how an approach undermining the use of synthetic securitisation in these instances would be consistent with the objectives of a Capital Markets Union or Banking Union, nor how, from a wider perspective, this would benefit the robustness of the European banking system.

We further note that the use of SES is more prevalent in synthetic securitisations of SME loans than in other asset classes including loans to large corporates. The proposed rules would make it more expensive for banks to manage the risks and capital requirements of their SME exposures compared with exposures to larger corporates and they would thus further increase the funding costs of SMEs relative to large corporates.

Technical Annex: Mathematical Model

For simplicity we construct a mathematical model of portfolio loan behaviour based on the following assumptions:

i. All loans in the portfolio have the same term and are bullets
ii. All loans in the portfolio have the same annual expected loss and this does not vary over the term
iii. All loans in the portfolio have the same LGD

The following notation is used:

Loan Term (in years)	T
Loan LGD	Λ
Loan Annual EL	$\mathcal{E}$

Additionally, we define the following:

1y PD	$p := \mathcal{E}/\Lambda$
1y Shape Parameter	k
Scale Parameter	$\theta := (1-p)^{-\frac{1}{k}} - 1$
Random variable for 1y realised defaults	G
Random variable for lifetime defaults	H
UIOLI SES	$s := \mathcal{E}$
Random variable for utilised SES in a year	U
Random variable for lifetime utilised SES	V

We model the annual defaults on the portfolio as being based on a gamma distribution[8]; in particular, we take Y to be a gamma distributed random variable with parameters k and θ, so that:

$$\Gamma(y;k,\theta) \coloneqq \mathbb{P}(Y < y) = \int_0^y \frac{x^{k-1}e^{-\frac{x}{\theta}}}{\Gamma(k)\theta^k}dx$$

We than take the annual realised defaults to be G calculated as:

$$G \coloneqq 1 - e^{-Y}$$

To calibrate the values of the parameters k and θ, we note that we seek the expected value of G to be equal to the annual PD, P, so that:

$$\mathbb{E}(G) = 1 - \mathbb{E}(e^{-Y}) = p$$

The moment generating function of the gamma distribution is known, so that

$$\mathbb{E}(e^{tY}) = (1 - t\theta)^{-k}$$

and therefore,

[8] The gamma distribution provides for a range of shapes of distribution that reasonably well represent the performance of a portfolio under a wide range of correlation assumptions, the impact of correlation being the dominant factor that prevents the central limit theorem applying in credit context and causing realised losses to be tightly clustered around expected losses.

$$\mathbb{E}(G) = 1 - (1+\theta)^{-k} = p$$

which gives, as indicated above,

$$\theta = (1-p)^{-\frac{1}{k}} - 1$$

The variance of G can be calculated as follows:

$$\mathrm{Var}(G) = \mathrm{Var}(1-G) = \mathbb{E}(e^{-2Y}) - \mathbb{E}(e^{-Y})^2$$
$$= (1+2\theta)^{-k} - (1+\theta)^{-2k}$$

This is a decreasing function of k so that as k increases, the variance, and hence standard deviation of G decreases.

The one-year losses on the portfolio can be represented by $G\Lambda$ and it can be seen that the expected value of this is equal to $p\Lambda = \mathcal{E}$.

Suppose the portfolio has balance 1 at the start of a year; then in that year, the utilisation of SES will be:

$$U = \mathrm{MIN}(\Lambda G, s) = \Lambda\, \mathrm{MIN}(G, \mathcal{E}/\Lambda) = \Lambda\, \mathrm{MIN}(G, p)$$

So that the expected utilisation of SES will be:

$$\mathbb{E}(U) = \Lambda\, \mathbb{E}\big(\mathrm{MIN}(G,p)\big)$$

$$\mathbb{E}\big(\mathrm{MIN}(G,p)\big) = \int_{G=0}^{G=p} G\, dG + p \int_{G=p}^{G=1} dG$$

$$= \int_{G=0}^{G=p} G\, dG + p\left(1 - \int_{G=0}^{G=p} dG\right)$$

To calculate this, we need to change variables from G to Y:

$$G = 1 - e^{-Y}, Y = -\log(1-G)$$

So we get,

$$\mathbb{E}\big(\mathrm{MIN}(G,p)\big) = \int_0^{-\log(1-p)} (1-e^{-Y})dY + p\left(1 - \int_0^{-\log(1-p)} dY\right)$$

$$= p + (1-p)\int_0^{-\log(1-p)} dY - \int_0^{-\log(1-p)} e^{-Y} dY$$

It can be calculated that

$$\int_0^{y} e^{tY} dY = (1-t\theta)^{-k}\, \Gamma\left(y; k, \frac{\theta}{1-t\theta}\right)$$

So that,

$$\mathbb{E}\big(\mathrm{MIN}(G,p)\big) = p + (1-p)\,\Gamma(-\log(1-p)\,; k, \theta) - (1+\theta)^{-k}\,\Gamma\left(-\log(1-p)\,; k, \tfrac{\theta}{1+\theta}\right)$$

This can be inserted to provide a closed form computation of the expected utilisation of 1y SES, U, but since expectation is linear and each year's performance is assumed to be independent, we can also use this to provide a closed form expression for V by multiplying this by the expected annual balances, taking into account the expected prior defaults.

Since we are assuming that the loans are non-amortising, it is also possible to determine the probability distribution of the lifetime defaults and lifetime losses.

The non-defaulted proportion of the portfolio after 1y is given by $1 - G$, and hence after T years, by $\prod_1^T (1 - G_i)$, where the index i references the years of the transaction. Therefore, the lifetime defaults H are given by,

$$H = 1 - \prod_1^T (1 - G_i) = 1 - \prod_1^T e^{-Y_i} = 1 - e^{-\sum_1^T Y_i}$$

Then the expected lifetime defaults are given by:

$$\mathbb{E}(H) = 1 - \mathbb{E}(e^{-Y})^T = 1 - (1 + \theta)^{-Tk} = 1 - (1 - p)^T$$

The gamma distribution has the property that if Y_i are independent, identical and each gamma distributed so that,

$$\mathbb{P}(Y_i < y) = \Gamma(y; k, \theta)$$

Then the sum, $Z = \sum_1^N Y_i$ is also gamma distributed with

$$\mathbb{P}(Z < z) = \Gamma(z; kN, \theta)$$

Therefore, we see that $-\log(1 - H) = \sum_1^N Y_i$ is also gamma distributed, and hence can write

$$H = 1 - e^{-Z}$$

This makes it easy to determine quantiles of the distribution of H from those of the gamma distributed random variable Z.

Note also that, in addition to these closed form mathematical formulations, all of these calculations can also be carried out using Monte Carlo simulations of the relevant random variables and distributions, yielding similar results.

Technical References

[1] "Gamma process dynamic modelling of credit", Baxter, 2007 – Gamma Process applied to credit derivatives

[2] "Financial Modelling with Jump Processes", Cont & Tankov, – mathematical background to Gamma Processes

[3] "The Gamma Loss and Prepayment Model", Jaeckel, 2008 – Gamma Processes applied to granular portfolio modelling for ABS

[4] "Intensity Gamma: A New Approach to Pricing Portfolio Credit Derivatives", Joshi & Stacey, 2006 – Gamma Process applied to credit derivatives

[5] "More Mathematical Finance", Joshi, 2011 (Section 10.5) – Gamma Processes applied to credit derivatives