CREDIT SUISSE

Secretariat of the Basel Committee on Banking Supervision
Bank for International Settlements
CH-4002 Basel
Switzerland

June 20, 2018

RE: Revisions to the Minimum Capital Requirements for Market Risk, March 2018

Dear Members of the Basel Committee,

Credit Suisse AG ('CS') appreciates the opportunity to comment on the Committee's March 2018 Consultative Document detailing Revisions to the Minimum Requirements for Market Risk (hereafter referred to as the 'Consultative Paper' or 'CP').[1] The CP makes a lot of progress in aligning capital charges with underlying risks, thereby incentivizing appropriate risk management behaviour. It does so in particular by improving the risk sensitivity of the fall-back standardized approach (known as the 'Sensitivities-Based Method' or 'SBA'), and we commend the Committee and the Market Risk Group ('MRG') for their hard work to achieve that goal. We are concerned, however, that the framework does not go far enough to incentivize use of the more primary approach to calculating market risk capital i.e. the Internal Models Approach ('IMA'). Specifically, the CP increases the complexity of the IMA approach, and continues to impose high barriers to the use of internal models by firms. This could lead to unintended consequences, including the attenuation of high-quality IMA modelling and significant increases in market risk capital for many trading assets.

In this submission, we first propose a variety of nuanced changes to the proposed SBA framework, while nonetheless recognizing that the CP's revisions go a long way towards better aligning SBA capital with underlying risks. The CP's proposed revisions of a variety of risk weights, inclusion of an FX triangulation provision, enhancing the sensitivity of the floor for correlation scenarios, and improving the consistency of the curvature shock scenario are all positive developments. These changes, along with the modifications and clarifications we suggest in this submission, would make the SBA a more credible fall-back to the more risk-sensitive IMA.

Second, while we acknowledge that material enhancements have also been proposed for the IMA, the complexity of the framework, the limited difference in capital outcomes between SBA and IMA, and the rigidity of the treatment of non-modellable risk factors ('NMRF') remain obstacles to widespread use of IMA. We also believe the proposed framework would lead to increased run-the-bank costs of IMA post-implementation. While the Committee has recognized that the intent is for firms to maximize their use of IMA modelling (rather than relying on SBA), the new framework still does not sufficiently incentivize widespread and high-quality IMA modelling, which is useful not only for capital calculation but also for market risk management purposes.

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[1] Basel Committee on Banking Supervision, "Consultative Document: Revisions to the minimum capital requirements for market risk," March 2018. Available at: https://www.bis.org/bcbs/publ/d436.htm.

With respect to IMA enhancements, we believe that progress has been made in the design of the profit and loss attribution ('PLA') test that trading desks must pass in order to be eligible to use the IMA, particularly in terms of data alignment, sample/frequency changes, and test metrics changes, all of which will reduce the large Type 1 error and instability issues that occurred with the original test. We also welcome the so-called penalty or 'traffic light' approach to PLA test failures, which reduces the damaging cliff effects of transitions between the IMA and SBA that we saw in the original market risk capital standards. At the same time, we believe further refinements can be made to the PLA test that would maximize IMA eligibility while retaining the robustness of the current test.

By contrast, the treatment of NMRFs in the CP is deeply problematic. We fully support the NMRF concept – firms should always base their models on good quality data inputs. However, the revised NMRF framework, as outlined in the risk factor eligibility test ('RFET'), continues to be unduly rigid. That rigidity (e.g., the treatment of seasonal markets) penalizes trading in emerging markets, as well as even more transparent markets, such as the U.S. corporate bond market. Moreover, the potential solutions to these issues, such as data aggregation, remain in their early stages, with significant technical and legal uncertainty remaining about the information that can be pooled. Relying on overly optimistic projection of what can be pooled may result in an overly restrictive framework. In the absence of changes to the current framework to allow for more flexibility, the NMRF framework could become both a roadblock to IMA qualification and a potential source of instability in model outputs. It is important to note that such instability would be wholly unrelated to the actual risks of trading in a particular market.

Finally, as we note in this submission, we are broadly supportive of the CP's trading desk provisions, particularly the additional flexibility that allows traders to be assigned to more than one trading desk. We also believe that the CP contains important improvements to the boundary definitions between the trading book and banking book, though we have concerns about the added restrictive definition in the CP where only equity fund products meeting the specific criteria (e.g., daily real price, full look-through/track a "non-leveraged" benchmark, and less than 1% tracking difference) would be eligible for the trading book designation. We propose that the Committee consider providing more clarifications in certain cases (i.e. net short credit or equity position in the banking book), and reinstate original Basel II wording in others (i.e. legal impediment to selling or hedging) in order to facilitate easier implementation of the new trading and banking boundary.

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We thank the Basel Committee on Banking Supervision for its considerations of our comments. If you have any questions, please do not hesitate to contact the undersigned or Peter J. Ryan (+1 202-626-3306; peter.ryan.3@credit-suisse.com).

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Summary of Recommendations

Standardised Approach

- ***Revisions to the treatment of liquid FX pairs***
  We recommend that triangulation be allowed in full. Alternatively, the Committee could define a list of liquid currencies (rather than currency pairs), and allow all cross rates of currencies in that set to receive a less punitive treatment.

- ***Revisions to capital requirements for non-linear instruments***
  - We propose permitting firms to calculate the FX curvature capital in a particular currency (in accordance with the prescribed rule for that currency) and then simply convert to the reporting currency using the appropriate FX spot rate.
  - We also recommend that firms should be able to include in the curvature calculations any other instruments exhibiting curvature but not vega, e.g., bonds, long-dated interest-rate swaps.
  - We believe SBA rules should allow long gamma exposure to offset delta capital in order to reflect the benefit stemming from portfolio protection insurance.

- ***Additional SBA clarifications***
  - We propose an additional bucket for "Indices, Funds, and ETFs" to accommodate funds with less frequent look-through to ensure conservatism in SBA capital and so that the instruments could remain on the trading book.
  - We believe the Committee should also clarify how to interpret paragraph 70(a) as this remains ambiguous and subject to multiple interpretations.
  - We recommend that variance derivatives attract a Residual Risk Add-on ('RRAO') charge of 0.1% rather than 1% (i.e., an add-on of 0.1% of the absolute Notional) because they are already subject to delta, vega and curvature risks.
  - We also recommend hedged yield-curve spread options (CMS Spread) trades should receive recognition of the "net" Notional when calculating the RRAO charge.

Internal Models Approach (IMA)

- ***PLA test metric design***
  We believe that either the Kolmogorov-Smirnov or Chi-Squared test metrics would be preferable alternatives to the current ruleset. We recommend that both metrics should be tested on real portfolio data over an adequately long monitoring period before a final decision is made by the Committee.

- ***PLA test failure consequences***
  - We recommend that the calibration of the thresholds should occur on real-portfolio data rather than reliant on simulated data alone, i.e. around the time when firms are able to produce 250-day, as part of the IMA application.
  - We are supportive of the introduction of a ceiling to prevent potential mixed IMA-SA capital outcomes to be higher than all-SA, in particular when the higher IMA charge is driven by a loss in diversification benefits.

- ***NMRF: Satisfying modellability requirements and expectations for internal model calibration***
  - We strongly support adoption of the proposed Alternative 2; however, we would prefer some flexibility to reduce the granularity of these standardised buckets subject to supervisory approval, especially along the strike dimension.
  - We also believe that some clarifications or revisions of rule text should be considered to better align with intent of the 'modellability' assessment.
  - We recommend in cases where the number of risk factors in the Expected Shortfall ('ES') model is lower than the number of buckets across a dimension (i.e. maturity, expiry, underlying tenor, strike, etc.), then buckets not associated with any risk factors would be permitted to be split and merged with the neighbouring buckets.

- ***NMRF: Impact of the framework on seasonal markets***
  We believe that by relaxing the '1-in-30' rule in the RFET, the effects of seasonality (where a 'dormancy' of a certain market over holiday seasons could significantly impact the 'modellability' of certain risk factors that are considered to be fully liquid and modellable for the remainder of the year) can be mitigated.

- ***Impact of NMRF idiosyncratic equity risk***
  We support extending the zero-correlation aggregation formula from idiosyncratic credit-spread risk to also include idiosyncratic equity risk.

- ***Annex D***
  - We recommend that firms be allowed to use parameters calibrated to all data available in the ES model, if they can demonstrate that calibration based all data available (in ES) would be sufficiently close to the calibration based on the modellable subsets of risk factors only.
  - We recommend only the data linkages with material idiosyncratic risk are assessed.
  - We recommend revising the CP wording to state that the data used for IMA ought to be "representative of the modelled risk factors" (rather than the 'modellability' data itself).
  - We recommend to relax the wording around "periodically reconcile price data used in a risk model and front office and back office prices" to account for existing data quality governance and control processes, as well as the difference in nature between RPOs and risk factors.
  - We recommend that regression models be subject to the same data update frequency requirements as any other models.
  - We seek clarification around conflicting texts between CP and the 2016 ruleset. In the CP, risk factors "included in the current set but not in the reduced set" are subject to ES calculation in the stressed period, whereas in paragraph 181(d) of the 2016 ruleset, the ES measure for the stressed period is only calculated for the reduced set of risk factors.
  - We recommend a clear distinction between proxying and risk-factor decompositions.

Scope of market risk capital requirements

- ***Treatment of structural FX positions***
  - We recommend the definition of a 'structural' position in paragraph 4(b) be expanded to make it explicit that hedges are included.
  - We recommend the conditions set out in paragraph 4(c) and 4(e) be amended to reflect the practicalities of measuring and hedging structural FX risk.

- ***Boundary between the trading book and banking book***
  - We propose to reinstate the original Basel II wording on "legal impediments to selling or hedging".
  - We believe additional guidance is needed to interpret "instruments that would give rise to a net short credit or equity position in the banking book", which is now classified as trading book. We recommend that banks should discuss and agree with their supervisor a framework-style approach to assess net short credit/equity positions in the banking book holistically, allowing deviation if required if agreed with regulators explicitly (per paragraph 17).
  - We believe no additional hurdles should be applied to achieve trading book allocation for equity investments in funds provided (1) a bank's fund investment meets the basic tests (daily prices, daily look-through), and (2) the bank can demonstrate trading book purpose in the normal way (paragraph 12 tests), and (3) the bank meets the more general requirements relating to trading strategy, governance, risk management etc. We seek further clarification on "non-leveraged" benchmark, and further recommend the look-through language contained in paragraph 80(ii) and 80(iii) of BCBS 266 should be reproduced in FRTB, for consistency.
  - We believe any derivatives used as a hedge ought to be classified consistently with the instrument that it is hedging.

1. Standardised Approach

The CP represents a significant improvement in the risk sensitivity of the SBA in the CP. In particular, we believe that the CP's revisions adjusting risk weights, adding an FX triangulation provision, enhancing the sensitivity of the floor for correlation scenarios, and improving the consistency of the curvature shock scenario make the SBA a more credible fall-back to the IMA. Below we suggest targeted changes that could further enhance the risk sensitivity of the SBA.

1.1 Revisions to the treatment of liquid FX pairs

The proposed revised text to allow triangulation in determining liquid currency pairs for FX sensitivities is an improvement over the prior text. One example cited in the latest CP is that of EUR/BRL which, though not explicitly on the liquid currency pair list, should be treated as liquid given that USD/BRL and USD/EUR are liquid, and can be used to create "synthetic" EUR/BRL exposure. This is a positive development in line with previous recommendations to ensure logical consistency and a level playing field for FX risk under the standardised approach. However we believe that the same rationale that is used to justify the liquidity of the first-order cross rates can be applied to prove modellability of second order crosses2.

Recommendation: We recommend that triangulation be allowed in full, and not limited to first order crosses of the currency pairs listed in the current text. A practical solution would be for the Committee to define a list of liquid currencies (rather than currency pairs), and allow all cross rates of currencies in that set to receive a less punitive treatment.

1.2 Revisions to capital requirements for non-linear instruments

The CP incorporates revisions to the curvature risk calculation to mitigate inconsistent results for closely-related financial instruments, and cliff effects due to the curvature-risk-capital aggregation formula.

The CP also acknowledges a previously raised issued related to FX curvature for industry feedback. However, additional industry impact data would be required to evidence materiality of the double counting of FX curvature risks where neither of underlying currencies of a given FX instrument is in the bank's reporting currency.

The proposed revisions to capital requirements for non-linear instruments (curvature) are appropriate and in line with some previous industry recommendations. This is specifically true in relation to the improved consistency in scenario-shock application, and replacement of the punitive alternate aggregation formula with a zero floor. We also welcome the acknowledgement of the issues around FX curvature double counting, and the proposal for banks to submit further evidence. However, further assessment will be required to comment on the appropriate value of the scalar, X, which depends on the portfolio at hand. Since a single value is desired, this should be the result of calibrations on a large number of realistic, large-scale, diversified portfolios in order to be a reliable estimate.

Recommendation: We propose permitting firms, disadvantaged by this asymmetry, to calculate the delta and curvature capital in a particular currency (in accordance with the prescribed rule for that currency) and then simply convert to the reporting currency using the appropriate FX spot rate. This

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[2] For example assume that the following rates are liquid: CCY1/CCY2, CCY2/CCY3 and CCY3/CCY4 then, by applying the triangulation rules twice then the second order cross CCY1/CCY4 is liquid as well since liquidity for it can be created from the liquidity of the other rates.

would allow for a level-playing field in the FX markets where the choice of reporting currency does not lead to preferential treatment in the SBA framework.

Recommendation: We believe SBA rules should allow long gamma exposure to offset delta capital in order to reflect the benefit stemming from portfolio protection insurance (also known as the "Delta-Curvature Disconnect").

Recommendation: While previous FAQ responses have clarified that any instrument exhibiting vega exposure, whether through optionality or not, should be captured under the curvature calculation, we believe that firms can also include in the curvature calculation any other instruments that exhibit curvature but not vega, e.g., bonds, long-dated interest-rate swaps.

1.3 Revisions to risk weights

The revision incorporates a reduction of the risk weights for 3 out of 7 risk classes: GIRR (20-40% reduction), Equity and FX (25-50% reduction) relative to the 2016 ruleset. The proposal better aligns the "revised" risk weights with the market shocks observed in historical stress period. This lead to an estimated 7-12% reduction on CS Group level standard rules capital.

1.4 Other clarifications

The additional clarifications in the consultation paper on the treatment of index and multi-underlying options subject to a look-though approach are helpful. However, we believe further clarification would be helpful where a look-through approach cannot be achieved for these products, such as:

- Liquid funds where constituents are not disclosed on a daily basis, but are regularly traded.
- Liquid ETFs and index funds where decomposition is generally available but only temporarily unavailable due to data and/or system issues.
- Fixed income indices (e.g., bond funds) that capture certain global characteristics of markets and are generally treated as a single underlier.

Recommendation: For the examples listed above, we believe that these products should continue to be capitalised under the trading book classification. We suggest that the Committee also introduce an additional bucket for 'Indices, Funds, and ETFs' for funds with less frequent look-through (as seen in ISDA SIMM v2.0 methodology), where such fall-back approach would ensure conservatism in SBA capital whilst the instruments could remain on the trading book. Naturally, national supervisors could also introduce additional approach on funds with less frequent look-through as seen in CRR2 to further differentiate the products.

Recommendation: The Committee should also clarify how to interpret paragraph 70(a) - "Multi-underlying options (including index options) are usually priced based on the implied volatility of the option, rather than the implied volatility of its underlying constituents." This is still unclear and subject to multiple interpretations.

Recommendation: With respect to the RRAO, we still have serious concerns about the treatment of variance derivatives. We firmly believe that this type of product should not attract a 1% charge (i.e., an add-on of 1% of the Notional) under RRAO. As this type of product is already capitalised under delta, vega and curvature risk charges under the SBA framework, a reduced 0.1% charge (i.e., an add-on of 0.1% of the Notional) would be more appropriate.

Recommendation: The yield-curve spread options (CMS Spread) are treated too punitively under RRAO. Given the requirement to use absolute (i.e., gross) Notional in formulating the charge, hedged

CMS Spread structures can attract many multiples of the capital attributable to the stand-alone, unhedged positions. This is because individual payments of the swap are often hedged separately. We recommend hedged CMS Spread trades should receive recognition of the “net” Notional when calculating the RRAO charge.

2. Internal Models Approach (IMA)

2.1 P&L attribution (PLA) test

We believe that significant progress has been made in the design of the PLA test that trading desks must pass in order to be eligible to use the IMA, particularly in terms of data alignment, sample/frequency changes, and test metrics changes, all of which will reduce the large Type 1 error and instability issues that occurred under the original test. We also welcome the so-called penalty or 'traffic light' approach to PLA test failures, which reduces the damaging cliff effects of transitions between the IMA and SBA that we saw in the originally proposed market risk capital standards. At the same time, we believe further refinements can be made to the PLA test that would maximize IMA eligibility while retaining the robustness of the current test.

2.1.1 PLA test input data

The CP would align the input data for Hypothetical P&L ('HPL') and Risk Theoretical P&L ('RTPL') for the PLA test. This is a positive development, as it clarifies the actual intention behind the PLA assessment, which is to measure the materiality of any simplifications in firms' risk management models driven by missing risk factors and differences in the way positions are valued compared with their front office systems. Therefore, we agree with the new text that potential misalignment in data sources as a result of time-zone differences and differences in data providers amongst other reasons should be removed for the purposes of the test.

2.1.2 PLA test metric design

The revised quarterly review process of the PLA performance using the preceding 12 months data to determine the desk-level IMA eligibility will improve the operational feasibility of the new framework. With regards to the choice of the second metric, initial analysis on limited data set has shown that the performance of the two test metrics is comparable and both metrics are a significant improvement over the older, initially proposed metrics. Other studies shared by industry participants suggest that the Kolmogorov-Smirnov (KS) thresholds are too conservative compared to the Chi-Squared ones. This results in a marginally lower pass rate for KS simulations but at the same time the Chi-Squared test can be more volatile and thus less stable than KS.

It is also worth mentioning that:

- The Chi-Squared test has been found to be more volatile and thus less stable to KS. This is due to squaring operation of the statistic that increases quadratically the more HPL and RTPL distributions become dissimilar. This makes the test less stable to outliers and data issues than KS test.
- KS test often outperforms Chi–Squared test in terms of discriminatory power on continuous distributions.
- Chi–Squared test can be sensitive to cases where the distributional assumptions do not hold due to small number of data points.
- The impact of binning choice on the discriminatory power of the Chi-Squared test is not well understood. The choice of 5 bins is arbitrary. The KS test does not require such *a priori* choice.
- Assumptions behind the theoretical foundations of these tests may not necessarily hold true in the context of PLA test (e.g., independence of the two samples), hence it is important that any thresholds are further calibrated and assessed on real-portfolio P&L data.

Recommendation: Given all the reasons presented above, either proposed test metric would be preferred over the current ruleset. However, we strongly believe that the two metrics should be tested on

real portfolio data over an adequately long monitoring period, rather than tested on simulated data alone, before a final decision is made by the Committee.

2.1.3 PLA test failure consequences

We welcome the introduction of a 'traffic light' approach in the new IMA framework for PLA. However, to benefit from such an approach, the parameters and thresholds need to be calibrated to a sufficiently diverse real-portfolio data set and over an adequately long monitoring period for stability. It is well known that numerically simulated data rarely capture the complexity present in noisy real life data that often follows different or even unstable distributions.

Recommendation: Calibration of the thresholds should occur on real-portfolio data, i.e. around the time when firms are able to produce 250-day, as part of the IMA application. Calibration on simulated data alone would result in an unrealistic change that is of limited practical use.

A particular area of concern is that a "tight" Amber zone could still result in desks moving from IMA to Standardised Approach ('SA') in an outright fashion, without much capital relief. Previously, the industry recommended a ceiling to prevent potential mixed IMA-SA capital outcomes to be higher than all-SA, in particular when the higher IMA charge is driven by a loss in diversification benefits. The revised IMA capital charge in the CP should therefore introduce such cap at the all-SA level.

Recommendation: In line with the industry (as evidenced by GARP/ISDA study for QIS 9), we continue to recommend a revised formula for capping a mixed IMA-SA portfolio:

$$ACC = min\{SA_{all\ desks}, IMA_{G,A} + k * max\{0, SA_{G,A} - IMA_{G,A}\} + C_U\}$$

2.2 Non-modellable risk factors (NMRF)

While there are positive changes introduced in the CP (i.e. allow for bucketing of risk factors for the 'modellability' assessment, and data pooling based on vendor solutions) regarding the NMRF framework, the revised NMRF framework continues to be too rigid. That rigidity (e.g., the treatment of seasonal markets) penalizes trading in emerging markets, as well as more liquid markets with more transparent prices, such as the U.S. and Canadian corporate bond market. Moreover, the potential solutions to these issues, such as data aggregation, remain in their early stages, with significant technical and legal uncertainty remaining about the information that can be pooled. In the absence of changes to the current framework to allow for more flexibility, the NMRF framework could become both a roadblock to IMA qualification and a potential source of instability in models. This instability would be wholly unrelated to the actual risks of trading in a particular market.

2.2.1 Process for satisfying modellability requirements and expectations for internal model calibration

We are supportive of the data-pooling schemes as they help to standardise the industry consensus around the 'modellability' assessment of traded instruments. We have previously supported and contributed to ISDA's data-solution proposal via the industry working groups. We also welcome the revised text allowing committed quotes made by a bank to be considered as a credible real price observations ('RPO's).

On the two alternatives for risk-factor bucketing raised by the CP, we strongly believe that Alternative 1 has several disadvantages. This is because Alternative 1 effectively prescribes one risk factor per bucket and the buckets must not overlap. Furthermore:

- It dis-incentivises more granular (hence more accurate) Expected Shortfall ('ES') models since these are penalized by splitting the same overall market liquidity into multiple buckets.
- It disregards standard calibration practices, i.e., the use of instruments with a wider range of maturities to calibrate a specific point in a term structure/curve.
- It may lead to counter-intuitive results across institutions where banks with poorer data would end up having better modellability coverage, less capital variability and fewer cliff effects due to less frequent transitions across buckets as trades age.

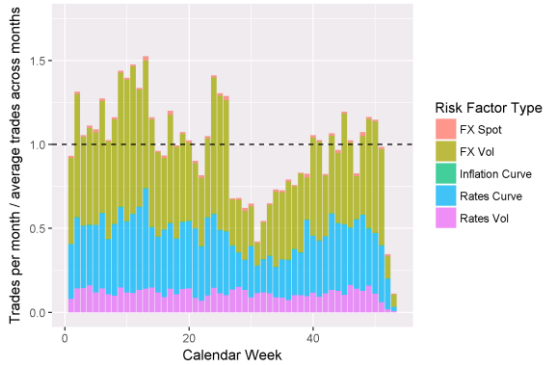
On the other hand, we believe that Alternative 2 offers a bucketing standard that would standardise the RFET assessment across the industry, whilst avoiding the issues associated with Alternative 1.

Recommendation: We strongly support Alternative 2 to be adopted in the final framework; however, we would prefer some flexibility to reduce the granularity of these standardised buckets subject to supervisory approval, especially along the strike dimension. The proposed 9 buckets are larger than number of parameters typically used for strikes in standard volatility models. We also believe that some clarifications or revisions of rule text should be considered to better align with intent of the 'modellability' assessment, so that a set of observations (RPOs) could be accepted as 'representative' of the associated risk factor if they are also sufficient as data input to model this such risk factor. Furthermore, in cases where the number of risk factors in the ES model is lower than the number of buckets across a dimension (i.e. maturity, expiry, underlying tenor, strike, etc.), then buckets not associated with any risk factors would be permitted to be split and merged with the neighbouring buckets.

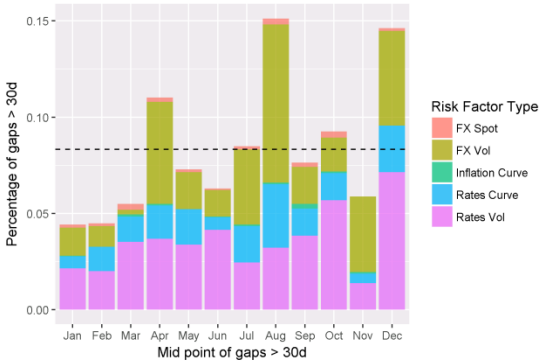
2.2.2 Impact of the NMRF framework on seasonal markets

The CP proposed changes only where concrete evidence and data based on specific examples could be produced. CS is working with the industry through ISDA to collect and provide additional evidence to support the materiality of seasonality. The industry example clearly illustrates that even instruments associated with liquid risk factors could experience decrease in transaction volumes over holidays. This is further evidenced by corresponding increase in the largest gaps for the risk factors across the asset classes.

- **Declining transaction volumes during summer and in December…**



…lead to concentration of largest gaps these time periods



While all asset classes are impacted, some seemingly liquid risk factors are non-modellable using "1-in-30" rule that would commonly be deemed liquid such as: 10y1y USD and EUR swaption vols as well as large parts of GBP swaption vols.

As per the industry view, materially low modellability outcomes have been observed in Emerging Markets:

- Interest Rates Curves: Swap, Cross Currency, OIS, and Libor basis
- IR Volatility: Outside the G4 currencies
- Foreign Exchange Volatility: At the money
- Credit: Sovereign CDS modellability (e.g. CEE, LatAm, Asia, Africa)

Meanwhile, lower than expected modellability outcomes have also been observed in Developed Markets:

- Term structure: While there is widespread low modellability at the longer end (five years & beyond) of the curve (Rates, FX, and Equities), material pockets of non-modellability persist at the shorter end (e.g. three years).
- Credit: Canadian bonds and as evidenced by sovereign CDS, modellability issues are not restricted to emerging markets.

Please refer to the ISDA CP response which provides an extensive - but non-exhaustive - product lists that are often liquid and regularly traded, but observed as likely to fail the "1-in-30" rule across the industry.

Recommendation: The RFET should avoid penalising instruments or markets subject to seasonal trends in supply/demand, especially in cases where a 'dormancy' of a certain market over holiday seasons could significantly impact the modellability of certain risk factors that are considered to be fully liquid and modellable for the remainder of the year. We believe that by relaxing the '1-in-30' rule in RFET, the effects of seasonality can be mitigated.

2.2.3 Impact of NMRF idiosyncratic equity risk

Recommendation: We believe that because these asset classes are fundamentally similar, the current asymmetric approach applied to equity and credit is not justified. Therefore, we support extending the zero-correlation aggregation formula from idiosyncratic credit-spread risk to also include idiosyncratic equity risk. Regression models in equity are well understood and typically have high explanatory power resulting in residuals that are zero-correlated in the vast majority of cases. The equity specific risk for many institutions, including CS, is also a material part of market risk capital.

CS has significant equity specific risks arising from regression models, as a result of a large number of equity single names in equity spot, volatility, volatility skew, repo and dividend. The material capital requirement assuming no diversification among these risk factors is about ~30% of the total NMRF capital charge. Hence the aggregation type drives materially different capital requirements. The table below shows the percentage-wise capital reduction, should the zero correlation aggregation be allowed for the appropriate equity idiosyncratic risk factors.

Table 1: Capital Impact of Allowing Zero-Correlation Aggregation for Equity Idiosyncratic Risk

	Capital Impact
Total **Equity** Non Modellability Risk Factor capital	46%
- of which: Total **Equity idiosyncratic** risks Non Modellable Risk Factor capital	82%
Total Non Modellable Risk Factor capital	13%

2.2.4 Annex D

We strongly believe that the accuracy of calibration data is critical for model performance and therefore strong governance and controls will ensure that the datasets are representative of the modelled risk factors. We also believe that data-quality criteria and principles shouldn't be a restricted set of prescribed

options, rather they ought to be pragmatic and sensible so that good datasets could continue to be used for modelling purposes.

It should also be noted that:

- Some of the suggested methods in Annex D (with the intent to illustrate the adequacy of the data) are not practically feasible, i.e., they would require prohibitively expensive extensive infrastructure builds or access to data components that are not likely to be available from industry shared data pools of RPOs.
- Calibration data used for risk models are already subject to performance and assumptions testing as part of the ongoing development testing model build and independent model validation. In some cases, experience has shown that bespoke analysis may be the best or the only way to fully evaluate the suitability of a chosen data set. Therefore, such methods should be considered as valid and in some cases sufficient data quality evidence.
- Whilst we acknowledge the principle that risk model prices should reflect current market prices for the risk factors they represent, the use of RPOs as a source for price testing, or for verification of risk factor values/prices, has significant limitations. They are not necessarily reflective of the fair value of the instrument. For example, an RPO may contain an XVA component along with a bid-offer spread; hence, the RPO would not be representative of mid–market prices. RPOs may also be observed at any time throughout the day which is not consistent with risk prices representing market data at end of day.

Recommendation **(Principle 1) -** We recommend that firms be allowed to use parameters calibrated to all data available in the ES model, if they can demonstrate that calibration based all data available (in ES) would be sufficiently close to the calibration based on the modellable subsets of risk factors only.

Recommendation **(Principle 2) -** We recommend this principle be revised so that only the data linkages with material idiosyncratic risk are assessed. In general, if exclusion of a risk factor from RTPL and ES doesn't lead to PLA test failure or backtesting exceptions, then such risk factors should be considered as immaterial and should not be required in the capital model. The same principle should apply to idiosyncratic risk components. The assessment of idiosyncratic risk components should only be mandatory if they are material for the portfolio in scope.

Recommendation **(Principle 3) -** Rather than data for internal models being "representative of RPOs" per the text of the CP, the data ought to be "representative of the modelled risk factors". In many cases RPOs consist of instrument prices rather than the actual risk-factor values; hence, they cannot be used interchangeably. In some cases where external RPOs are used, not all the data components and infrastructure required to map risk factor values to external RPOs may be available. This would disqualify all risk factors in the composite RPO.

Recommendation **(Principle 4) -** We recommend that the current consulted text be revised so that the mandate to "periodically reconcile price data used in a risk model and front office and back office prices", including "comparisons of risk prices with RPOs" be relaxed taking into account existing data quality governance and control processes, as well as the difference in nature between RPOs and risk factors:

- As per current regulations and market practice, risk prices sourced directly from the front office prices are already subject to a periodical check against an independent third-party source as part of the IPV process. Where risk prices are sourced directly from a third-party vendor, they are typically not subject to the same level of IPV testing (given they are already independently sourced) but their adequacy is always evaluated as part of model development and independent model validation. This practice already ensures that data used in the risk model is reconciled against prices observed or quoted in the market. In addition, model development, model performance testing and independent

model validation already cover market-data quality ensuring that historical data used are fit for purpose.

- In most cases, reconstructing the values of individual risk factors from the RPOs would not be feasible as the RPOs only represent prices of various instruments associated with those risk factors. Reconstructing the value of the risk factors from RPOs often requires re-pricing the trades/transactions using the firm's pricing models. Repricing trades associated with external sources (i.e., data pooling/vendor solutions) would be even more challenging as the price alone (without trade meta-data) would not be sufficient.

Recommendation **(Principle 5) -** We recommend this principle be revised so that regression models be subject to the same data update frequency requirements as any other models, i.e., at minimum monthly but more frequently if market conditions/events necessitate it.

Recommendation **(Principle 6) -** The Committee ought to clarify a conflict of text between CP wording and the 2016 ruleset. In the CP, risk factors "included in the current set but not in the reduced set" are subject to ES calculation in the stressed period, whereas in paragraph 181(d) of the 2016 ruleset, the ES measure for the stressed period is only calculated for the reduced set of risk factors.

Recommendation **(Principle 7) -** We recommend a clear distinction between proxying and risk-factor decompositions. As paragraph 183 (c) permits the use of decomposing a non-modellable risk factor into a modellable risk factor and a non-modellable basis charge, there should be no further requirement for the original risk factor and the decomposed form to be subject to proxy similarity criteria as the difference between the two are fully capitalized via the basis charge.

3. Scope of market risk capital requirements

We are broadly supportive of the CP's trading desk provisions, particularly the additional flexibility that allows traders to be assigned to more than one trading desk. We also believe that the CP contains important improvements to the boundary definitions between the trading book and banking book, though we have concerns about the added restrictive definition in the CP where only equity fund products meeting the specific criteria (e.g., daily real price, full look-through/track a "non-leveraged" benchmark, and less than 1% tracking difference) would be eligible for the trading book designation. We propose that the Committee consider providing more clarifications in certain cases (i.e. net short credit or equity position in the banking book), and reinstate original Basel II wording in others (i.e. legal impediment to selling or hedging) in order to facilitate easier implementation of the new trading and banking boundary.

3.1 Treatment of structural FX positions

We welcome the inclusion of branches in the scope of paragraph 4 and the other clarifications in the revised text. However, we believe that some further amendments are required. Note that paragraph numbering according to the consultation document BCBS 436 is used below.

Recommendation: The definition of a 'structural' position in paragraph 4(b) should be expanded, to make it explicit that hedges are included.

Recommendation: We consider that the drafting of the conditions set out in paragraph 4(c) to 4(f) should be amended to reflect the practicalities of measuring and hedging structural FX risk. The risk position (and therefore, potentially, any hedge) will change with movements in retained earnings, capital etc. Therefore, the requirement for supervisory pre-approval of the structural FX position and any changes, set out in paragraph 4(e), is likely to be difficult to manage in practice.

We envisage that banks should, instead, seek approval for a documented framework, covering the scope of what is treated as a structural FX risk position, the hedging strategy, hedge products, controls, reporting etc., to support the exclusion of structural risk positions from the determination of the net open currency position. As part of this framework, banks would also agree with their supervisor the principles for measuring the duration of the exposure and the lifetime of the exclusion, to ensure that all (and only) long-term risk positions are properly covered.

3.2 Boundary between the trading book and banking book

We welcome the following amendments and FAQ responses which provide helpful clarification on a number of aspects of the January 2016 text:

- Removal of the requirement that an "instrument that is managed on a trading desk" must be included in the trading book (paragraph 13(b) in the January 2016 text);
- Clarification that the inclusion of an instrument in the mandatory banking-book list (para 15) takes precedence over the presumptive trading-book classification (paragraph 16) and the trading book conditions set out in paragraphs 12 and 13;
- Guidance on trading–related repo-style transactions (new footnote to paragraph 16(e)) and underwriting commitments (paragraph 13(c) and FAQ Section 3.1, Q4).

However, there are still a number of areas where we believe further change, or additional guidance, is needed. These are described below, with the ordering taken from the paragraph numbering from the CP.

Paragraph 10 - *Legal impediments to selling or hedging.* Basel 2 (paragraph 685) states "To be eligible for Trading Book capital treatment, financial instruments must be either free of any restrictive covenants on their tradability or able to be hedged completely". Thus, an instrument that is subject to, say, a temporary lock-up period may still be eligible for trading book classification if it can be fully hedged (and satisfies trading intent). The EU CRR text in Art 102(1) is similarly worded, and has the same meaning: "Positions in the Trading Book shall be either free of restrictions on their tradability or able to be hedged".

FRTB re-words this requirement as follows (paragraph 10) "Banks may only include a financial instrument, foreign exchange or commodity in the Trading Book when there is no legal impediment against selling or fully hedging it". This sentence means that a legal impediment affecting a bank's ability to sell the position automatically bars it from inclusion in the trading book (i.e., irrespective of the bank's ability to hedge). This wording cannot be read in such a way as to retain the meaning of the Basel 2 language. The EU CRR2 text does not change the original Art 102(1). Consequently, an instrument that is subject to an initial lock-up period would be forced into the banking book, with no practical means of transferring it to the trading book after that period has ended, given that transfers between banking and trading book are severely restricted (paragraph 27-30).

Recommendation: We would welcome the reinstatement of the original Basel 2 paragraph 685 wording instead of the FRTB text, or, alternatively, confirmation that this change is deliberate.

Paragraph 13(b) - *trading book treatment applies to instruments that would give rise to a net short credit or equity position in the banking book*. Paragraph 13(b) is largely unchanged from the January 2016 text and remains ambiguous. Absence of any guidance on the overall intention of this requirement, it represents a blunt instrument that risks forcing an excessively wide population of banking book items into the trading book, possibly inappropriately. It also risks inconsistent interpretation and application by different banks.

Recommendation: Guidance (supplemented with examples) is needed on the overall intention of this requirement. It should address, inter alia, the following areas of uncertainty:

- In the case of a net short credit position created by the over-hedging of, say, a banking book loan with a CDS, does trading book classification apply to the amount of the over-hedge (rather than the whole amount of the CDS)?
- Is this requirement intended to capture, say, outright purchased CDS protection that does not yield a regulatory capital benefit (albeit that it might provide economic benefit)?
- Footnote 3 should be amended, to clarify that the reference to 'present value' ('PV') is not intended to prescribe PV as the appropriate way of measuring the amount of net short credit: this is at odds with the basis on which the risk-weighted asset calculation for, say, a loan and CDS hedge is performed.

Recommendation: A route should be established for banks to discuss and agree with their supervisor a framework-style approach to net short credit/equity. For example, items listed in paragraph 16 are presumed to be treated as trading book instruments, but paragraph 17 envisages a process whereby supervisory approval can be sought for this presumption to be set aside. We suggest that a similar approach would be appropriate here, enabling banks to agree the scope of application of the "net short credit" rule, materiality levels, frequency of monitoring, protocol for establishing and adjusting the trading book element etc. This could be achieved by, for example, including the paragraph 13(b) requirement in paragraph 17.

Paragraph 15a - *Equity investments in funds*: The original FRTB text focussed on the requirement for daily prices and daily look-through, with paragraph 15(e) prescribing mandatory banking book treatment where either one was unavailable. The new paragraph 15a contains conditions, over and above daily

price quotes and daily look-through, that must be met before an instrument can be considered for trading book treatment.

The specific requirement for a trading book fund to "track a non-leveraged benchmark" is unduly restrictive. It will have the effect of forcing into the banking book many funds that are liquid, traded regularly, properly risk-managed and appropriately hedged, simply because they do not track a non-leveraged benchmark. This is likely to limit banks' appetite for operating such funds, with potential adverse consequences for the market in fund products that many non-bank investors use as part of their risk management strategy. In addition, we note that "non-leveraged benchmark" is not defined.

Further, we note that BCBS 266 (Capital requirements for banks' equity investments in funds), contains specific criteria to support the look-through approach for funds in the banking book, in paragraph 80(ii) and 80(iii). Whilst these criteria arguably do not represent more onerous standards than banks would themselves apply to support look-through for funds in their trading books, we consider that the language should be consistent across the two texts.

Finally, the inclusion in paragraph 16 (presumptive trading book) of funds that are not allocated to the banking book under paragraph 15a seems unnecessary. Funds that pass the tests set out in paragraph 15a should be subject to the same trading book criteria as other instruments (i.e., paragraph 12 'purpose tests') and the more general policies and procedures outlined in paragraph 21 and section E.

Recommendation: We believe no additional hurdles should be applied to achieve trading book allocation for equity investments in funds per original 2016 text, provided:
(1) a bank's fund investment meets the basic tests (daily prices, daily look-through), and (2) the bank can demonstrate trading book purpose as stated by paragraph 12, and (3) the bank meets the more general requirements relating to trading strategy, governance, risk management etc.

Recommendation: If the current requirements in paragraph 15(a) tests (ii) and (iii) are retained, we recommend that guidance and/or examples should be provided on what constitutes a "non-leveraged benchmark".

Recommendation: We recommend that the look-through language contained in paragraph 80(ii) and 80(iii) of BCBS 266 should be reproduced in FRTB, for consistency.

Recommendation: The list of 'presumptive trading book' treatments in paragraph 16 should not include equity investments in funds, paragraph 16(c).

Paragraph 16(f) - *Inclusion of options under 'presumptive trading book' classification*. The consultation paper has clarified the relative priority of paragraph 15 (mandatory banking book), paragraphs 12/13 (trading book) and paragraph 16 (presumed trading book). This has eliminated some of the inconsistencies and conflicting text affecting the treatment of options.

However, the continued inclusion of options in paragraph 16 leads to, for example, 'presumed' trading book classification being applied to an option that is used to hedge a banking book item, when this is not a 'mandatory' banking book item according to paragraph 15. This is a counter-intuitive result.

Recommendation: We believe that the text should provide for *any* derivative used as a hedge to be classified consistently with the instrument that it is hedging. A supervisory approval process (as described in paragraph 17) should not be required to achieve this outcome. Accordingly, options should be removed from the list of presumptive trading book treatments, set out in paragraph 16(f).