ANZ response to BCBS Consultative Document

Simplified alternative to the standardised approach to market risk capital requirements

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We welcome the opportunity to provide our feedback to this Consultative Document (CD) published by the Basel Committee on Banking Supervision (BCBS). The CD introduces a "simplified alternative" to the Standardised Approach calculation, the core component of which is the "Reduced Sensitivity-based method" (R-SbM). In our response to this CD, we suggest that the philosophy behind the R-SbM has much to recommend it, even for a bank like ANZ which would be, according to the various criteria listed in paragraph 204, potentially excluded from using it. In many ways, beyond the ease of calculation, the R-SbM is preferable to the "full" SbM calculation which was defined in the Market Risk Standard released in January 2016. ANZ propose that, with a few key modifications, which we offer in this response for consideration by the BCBS, the R-SbM could form the core of the Standardised Approach calculation to be performed by *all banks*.

The essential philosophy of the R-SbM is to remove the capitalisation of "non-Delta" risks under SbM, and to compensate by increasing the capital charge for "Delta" risk under R-SbM. For example, three of the risks which were explicitly capitalised under the SbM, but which are not capitalised under R-SbM, are:

- Basis risk (in its many variations)
- Vega risk, and
- Curvature risk

To counterbalance the non-capitalisation of these risks, the R-SbM *increases* the risk-weights used in its Delta charge calculations, compared to those prescribed for the SbM. So for example, the risk-weights for the General Interest Rate Risk (GIRR) Delta charge increase from a maximum of 240bps under SbM to a flat 500bps under R-SbM. Risk-weights used in the FX Delta calculation increase by 50%. And so on.

ANZ is in full agreement with the idea behind this approach, as a means to simplifying the Standardised Approach calculation. It is conceptually clean as well as being computationally straightforward. ANZ's proposal is that with some potential modifications that allow for the capitalisation of *negative* curvature exposures, we don't see why the R-SbM could not be considered for use across *all banks*. This would alleviate many of the pain points with the full SbM, and further the aim of a having a single Standardised Approach calculation used across the industry, which is simple, transparent and comparable.

The document is in two parts. Firstly, we offer some commentary on the proposals in the Consultative Document, with reference to the specific numerical paragraphs in which those proposals appear. Many of the requirements under R-SbM are copied directly across from the full SbM, and accordingly some of our observations about the R-SbM apply equally to the SbM. The commendable simplicity of the R-SbM draws into stark relief many of the problems which are encountered trying to implement the full SbM.

In a second section, we offer some suggestions about how the R-SbM might be expanded to allow for wider use. We suggest that most of the constraints *against* the use of the R-SbM, which are laid out in the Consultative Document in paragraph 204, could be removed.

Part I. Specific Observations

1. Double count of GIRR and CSR for sovereign bonds (Paragraph 211)

The treatment of sovereign risk under the full SbM appears to have been simply carried across to the R-SbM. The contention here remains with the perceived "double-count"[1] of a charge for both General Interest Rate Risk (GIRR) and Credit Spread Risk (CSR). For sovereign bonds, GIRR and CSR are *not* separately managed risks. And the calibration of the respective risk-weights for the GIRR and CSR Delta charges is going to be difficult to achieve in such a way that the total capital charge is not obviously punitive.

As an alternative for R-SbM (and also SbM), we suggest simplifying the capital treatment of sovereign bonds and just give them a GIRR Delta charge. This of course would be in addition to the Default Risk Charge (DRC) for credit risk, which is still a part of the simplified Standardised Approach. In other words, we would propose to remove the CSR charge for sovereigns, and, if deemed necessary, recalibrate the risk-weight for sovereigns in the DRC – even if this means adding a new, distinct bucket for sovereigns – for the incremental "non-default" credit risk (i.e., migration risk and credit spread volatility).

By removing the CSR Delta charge for sovereigns, what would remain is a two-part capital charge for sovereign risk (GIRR and DRC) which mirrors the two conceptually distinct risk exposures that are actually managed.

2. Delta GIRR (Paragraphs 219-225)

General Approach

Given that the existing (Basel 2/2.5) standardised calculation is arguably more complex and more risk sensitive than what is proposed for the R-SbM, and no more onerous to calculate, it is possible to make the case that the GIRR Delta calculation under R-SbM did not have to be simplified *quite* as much as it has been. For minimal increase in computational complexity, this can be made into a more risk sensitive GIRR calculation. For example, the two-bucket split of the yield curve at 5 years could easily be changed to three buckets (short, medium and long tenors), which is what exists under Basel 2/2.5. It would even be feasible to have a three-bucket split for some defined currencies, say those that trade out to a maturity of 10 years, and a two-bucket split for other currencies.

Preferential Currencies (i.e., those which get a lower risk-weight)

A welcome divergence of the R-SbM from the SbM is that it no longer treats the *domestic reporting currency* of a bank as a 'preferential' currency, which gets a lower risk-weight (scaled down by a factor of about 71%). This is a good proposal, because it advances the FRTB's original aim of creating a simple, transparent and comparable capital metric.

The choice of abolishing *altogether* the notion of preferential currencies, whilst certainly transparent and simple, may be a step too far. There is nothing wrong with having different tiers of risk-weights for different currencies, and there is amble empirical evidence to support some form of blunt differentiation. The BCBS might like to reconsider this, noting that if they do choose to allow tiering of currencies, then ideally it should be the same across R-SbM and SbM (without any allowance for the domestic reporting currency, unless that happens to one of the explicitly named currencies).

Basis Risk

The overall approach of R-SbM in the GIRR Delta charge certainly addresses one of the key flaws of the SbM, which is the treatment of *basis risk*. R-SbM dispenses with the SbM's approach of using a 3-way scaling of correlations, where the SbM charge is taken as the worst outcome after scaling all correlations, in turn, by 75%, 100% and 125%. Correlations for basis risk exposures are both qualitatively and quantitatively different to intra-bucket (ρ_{kl}) and inter-bucket (γ_{bc}) correlations, regardless of the asset class. The charge for basis risk under the SbM is accordingly quite punitive. For some desks, ANZ has observed a reduction in the charge from SbM to R-SbM of up to 95%, purely on account of the different capital treatment for tenor basis risk. This is not to make the point that the R-SbM is necessarily calibrated appropriately (although SbM and R-SbM cannot *both* be appropriate). But it is much easier to "add back" more capital for basis risk in the R-SbM, in a more refined way that just increasing Delta risk-weights, than it is to take it out of SbM.

1 The double-count alludes to the fact that, for many banks, the same sensitivities (DV01s or PV01s) are used as input to both the GIRR and CSR Delta calculations; hence they are counted, or risk-weighted (albeit differently in the two calculations) twice.

3. Delta FX (Paragraph 251)

Risk-weight

We recognise that the risk-weights and correlations proposed for the R-SbM in the Consultative Document are provisional, and subject to finer calibration at a later date. However, we would offer the observation that there should be some consideration made of the risks for which capitalisation is foregone under R-SbM, compared with the SbM, when prescribing risk-weights. For example, if there is no allowance for a bank that uses R-SbM to write options (paragraph 204, second bullet), what is the risk here that justifies the increase of the risk-weight from 30% to 45%? It can only be vega risk, in which case, since a bank that is using R-SbM cannot write options, the associated curvature can only be positive, and beneficial. For FX Delta there is no basis risk, and whatever curvature risk arises (from a long options exposure) will beneficially offset any vega exposure. So is a 50% increase in the prescribed risk-weight, compared with SbM, really warranted?

Preferential Currency pairs (i.e., those which get a lower risk-weight)

It appears incongruous that the FX Delta charge under R-SbM maintains the tiering with "preferential" currency pairs when in the same Consultative Document the decision was made to remove preferential tiering for the GIRR Delta charge. We note that it is the same list of currency pairs specified in the SbM which has simply been carried across to the R-SbM. If one looks past the fact that the prescribed list of preferential currency pairs is clearly politically motivated, and not driven by economics, there still remains the question about whether "triangulated pairs" are considered preferential. e.g., since USD/RUB and USD/MXN are considered preferential, are we really saying that RUB/MXN is preferential as well?

Since a portfolio of FX exposures can be decomposed into a series of single-currency (nostro) balances, some in credit, others in debit, why not move away from the notion of *currency pairs* to just *single currencies*? If preferential tiering of some currencies is deemed justified, which ANZ would support in principle, why not define the list of preferential currencies, and remove all the ambiguity around triangulation? This would also be in line with the definition of a risk *bucket* for the FX risk class, as defined in both the R-SbM and SbM.

Alternatively, as with GIRR Delta, the BCBS could simply abolish completely the notion of having *any* preferential currencies, and prescribe the same risk-weight for everything. That again is simple and transparent. But our suggestion is that it seems entirely feasible to maintain a degree of risk sensitivity in the capital charge by maintaining some form of tiering, without excessively ramping up the computational complexity.

Part II. Suggestions for broadening the scope of R-SbM

1. Computational ease

The ease of calculation of the R-SbM is undeniably appealing. The Basel Committee, followed by local regulators when it comes to implementation, will need to offer clear guidance on what the intended frequency of a Standardised Approach (SA) calculation would be, for banks that have, or seek to gain, accreditation to use the Internal Model Approach (IMA). We note that, at the present time, there is no clarity from the BCBS on the methodology by which an SA floor would be applied to any IMA capital charge. For example, is the intention that a *daily* IMA charge, which itself might be based on a 60-day average, should be floored by an SA number calculated only at *month-end*? Or should the SA charge be calculated daily, like the IMA charge? The reality is the full SbM calculation is computationally onerous to perform - especially for desks which have any optionality. The main computational challenge is in the curvature calculations, which require full revaluations of the portfolio for prescribed shocks of the underlying, both up and down.

The R-SbM has obvious appeal over the SbM. Banks that run IMA calculations ideally would like to have an SA number, calculated at the same frequency and on the identical exposures. For desks that are on IMA but which then subsequently lose that accreditation (eg., due to P&L attribution or back-testing failures), it is still desirable that they can maintain a daily, and still risk-sensitive (to a degree) SA capital charge. Accordingly, we make suggestions below about how the general approach underlying the R-SbM calculations could potentially be modified to allow its use more broadly, across all banks, and why it would then be much more preferable approach to the SbM *if* the requirement was to calculate the SA charge daily, like the IMA charge.

2. Curvature and Vega risk

The key challenge is how best to incorporate curvature and vega risk, for a portfolio that may be either long or short gamma. Our proposal would be to extend the R-SbM by having a three-tiered risk weighting, where the tiering occurs at *bucket* level, within each *risk class*.

Within each *bucket* the choice amongst the three risk-weights to be used for the Delta calculation could be determined based on the sign of the *net vega* for the *bucket*. A bucket with a net *long vega* (as a proxy for positive curvature) would be assigned the lowest risk-weight in the R-SbM Delta calculation, net *short vega* (negative curvature) would get the highest, and for a bucket which had *no optionality* an intermediate risk-weight could be applied. Whilst the required risk-weights would ultimately need to be calibrated, we might take the R-SbM risk-weight and scale them by [85%] for a net long vega bucket, 100% (i.e., as proposed) for a bucket with no optionality and [125%] in the case of net short vega. The benefit given for long vega (positive curvature) need not be equal and opposite to the penalty for short vega (negative curvature), but unlike the SbM, such a modification at least allows for *some recognition of the benefit* of a long vega/positive curvature position. Under SbM, positive curvature attracts no capital benefit, except and then only to the extent that it offsets negative curvature. ANZ considers this capital treatment to be unduly harsh and potentially one that disincentivises prudent hedging.

The advantage of modifying the R-SbM philosophy in this way should be clear. The determination of the net vega for a bucket, as a basis for simply determining which risk-weight should be applied for the Delta calculation, is more straightforward and less computationally intensive than the curvature calculation under the full SbM. Any trading desk that has option exposures will have a vega measure readily available.

The other thing to note is that the net vega figure could be based on the vegas which are used by the bank for its internal risk management. These are typically *absolute* vegas and not the *relative* vegas which are the prescribed input for the FRTB's SbM vega charge. Absolute vegas give the change in value for an absolute (usually) +1% increase in the underlying implied volatility, whereas for relative vegas, further multiplication by the actual level of the implied volatility is required (and that often needs to be sourced from a separate system). Hence all of the operational overhead of sourcing input data over and above that which is used for actual risk management could potentially be dispensed with, making for cleaner data flow and management.

For a bank with non-linear derivative exposures, the calculation of the SbM's curvature charge is the main computational bottleneck. It requires performing a full revaluation of the portfolio, after prescribed up and down shocks in the underlying. For large portfolios, this will inevitably involve the running of overnight batch processes, because it is computationally onerous. The modified R-SbM approach suggested above dispenses with that. And by dispensing with the full SbM curvature calculation, the R-SbM also avoids another problem which is common to the curvature calculation for GIRR and

potentially also CSR, which are the methodological "challenges" associated with pricing interest rate derivatives under negative yields[2].

If the R-SbM can be modified to deal with optionality (both short and long gamma), then we don't see why any of the proposed constraints against the use of R-SbM which are listed in paragraph 204 of the Consultative Document could not be dispensed with, and the modified R-SbM be used by *all banks*. We note that the Residual Risk Add-on, as well as the Default Risk Charge, from the full Market risk standard is carried across to the Simplified Standardised Approach. So for any exotic options, assuming the bank was allowed to trade them, there would still be the RRAO charge as well.

3. Final observations

A regulator can clearly stipulate and control what products any bank within their purview should or should not be able to trade, or whether negative curvature exposures should be allowed. There is no disagreement that it may be inappropriate for a smaller, less sophisticated bank to be warehousing a portfolio of Bermudan swaptions, for example. We suggest that this should remain as *a separate matter for regulatory oversight*, quite distinct and of no relevance as a delineator of which of two competing standardised capital calculations a bank should use.

Many smaller banks often have only a small portfolio of linear FX or GIRR exposures, and should find the R-SbM very simple to migrate across to, from the existing Basel 2/2.5 framework under which they now operate. By allowing the larger, more sophisticated banks to use a modified version of the R-SbM, you move towards the level playing field, away from the incongruity of having two "standardised" approaches, and to a more transparent, comparable regime where all banks are using the same calculation. Furthermore, the calculation is quick enough for the larger banks to perform daily, if they or their regulators require it (e.g., for the purposes of flooring an IMA charge), while the smaller banks could continue to perform the calculation just monthly.

Markets Risk

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[2] For the GIRR Curvature calculations, under the full SbM, the down shock to the yield curve, can mean for some currencies that the resultant yield curve is entirely negative. For the valuations of interest rate derivatives, there are consequent challenges associated with the construction of the volatility surface, as well.