Basel Committee on Banking Supervision

MAR
Calculation of RWA for market risk

MAR23
Standardised approach: residual risk add-on

Version effective as of 01 Jan 2022

First version in the format of the consolidated framework.
Introduction

23.1 The residual risk add-on (RRAO) is to be calculated for all instruments bearing residual risk separately in addition to other components of the capital requirement under the standardised approach.

Instruments subject to the residual risk add-on

23.2 Instruments with an exotic underlying and instruments bearing other residual risks are subject to the RRAO.

23.3 Instruments with an exotic underlying are trading book instruments with an underlying exposure that is not within the scope of delta, vega or curvature risk treatment in any risk class under the sensitivities-based method or default risk capital (DRC) requirements in the standardised approach.¹

Footnotes

¹ Examples of exotic underlying exposures include: longevity risk, weather, natural disasters, future realised volatility (as an underlying exposure for a swap).
FAQ
FAQ4

Can significant investments in insurance entities, including fully owned insurance subsidiaries, be consolidated for regulatory purposes as an alternative to the deduction treatment set out in CAP30.28 to CAP30.34?

Jurisdictions can permit or require banks to consolidate significant investments in insurance entities as an alternative to the deduction approach on the condition that the method of consolidation results in a minimum capital standard that is at least as conservative as that which would apply under the deduction approach, i.e., the consolidation method cannot result in banks benefiting from higher capital ratios than would apply under the deduction approach.

In order to ensure this outcome, banks that apply a consolidation approach are required to calculate their capital ratios under both the consolidation approach and the deduction approach, at each period that they report or disclose these ratios.

In cases when the consolidation approach results in lower capital ratios than the deduction approach (i.e., consolidation has a more conservative outcome than deduction), banks will report these lower ratios. In cases when the consolidation approach results in any of the bank’s capital ratios being higher than the ratios calculated under the deduction approach (i.e., consolidation has a less conservative outcome than deduction), the bank must adjust the capital ratio downwards through applying a regulatory adjustment (i.e., a deduction) to the relevant component of capital.

23.4 Instruments bearing other residual risks are those that meet criteria (1) and (2) below:

(1) Instruments subject to vega or curvature risk capital requirements in the trading book and with pay-offs that cannot be written or perfectly replicated as a finite linear combination of vanilla options with a single underlying equity price, commodity price, exchange rate, bond price, credit default swap price or interest rate swap; or

(2) Instruments which fall under the definition of the correlation trading portfolio (CTP) in MAR20.5, except for those instruments that are recognised in the market risk framework as eligible hedges of risks within the CTP.
FAQ
FAQ5  
Can short positions in indexes that are hedging long cash or synthetic
positions be decomposed to provide recognition of the hedge for
capital purposes?

The portion of the index that is composed of the same underlying
exposure that it is being hedged can be used to offset the long position
only if all of the following conditions are met: (i) both the exposure
being hedged and the short position in the index are held in the
trading book; (ii) the positions are fair valued on the bank’s balance
sheet; and (iii) the hedge is recognised as effective under the bank’s
internal control processes assessed by supervisors.

23.5  A non-exhaustive list of other residual risks types and instruments that may fall
within the criteria set out in MAR23.4 include:

(1) Gap risk: risk of a significant change in vega parameters in options due to
small movements in the underlying, which results in hedge slippage.
Relevant instruments subject to gap risk include all path dependent options,
such as barrier options, and Asian options as well as all digital options.

(2) Correlation risk: risk of a change in a correlation parameter necessary for
determining the value of an instrument with multiple underlyings. Relevant
instruments subject to correlation risk include all basket options, best-of-
options, spread options, basis options, Bermudan options and quanto
options.

(3) Behavioural risk: risk of a change in exercise/prepayment outcomes such as
those that arise in fixed rate mortgage products where retail clients may
make decisions motivated by factors other than pure financial gain (such as
demographical features and/or and other social factors). A callable bond
may only be seen as possibly having behavioural risk if the right to call lies
with a retail client.

23.6  When an instrument is subject to one or more of the following risk types, this by
itself will not cause the instrument to be subject to the RRAO:

(1) Risk from a cheapest-to-deliver option;

(2) Smile risk: the risk of a change in an implied volatility parameter necessary
for determining the value of an instrument with optionality relative to the
implied volatility of other instruments optionality with the same underlying
and maturity, but different moneyness;
Correlation risk arising from multi-underlying European or American plain vanilla options, and from any options that can be written as a linear combination of such options. This exemption applies in particular to the relevant index options;

Dividend risk arising from a derivative instrument whose underlying does not consist solely of dividend payments; and

Index instruments and multi-underlying options of which treatment for delta, vega or curvature risk are set out in MAR21.31 and MAR21.32. These are subject to the RRAO if they fall within the definitions set out in this chapter. For funds that are subject to the treatment specified in MAR21.36(3) (i.e. treated as an unrated “other sector” equity), banks shall assume the fund is exposed to exotic underlying exposures, and to other residual risks, to the maximum possible extent allowed under the fund’s mandate.

In cases where a transaction exactly matches with a third-party transaction (i.e. a back-to-back transaction), the instruments used in both transactions must be excluded from the RRAO capital requirement. Any instrument that is listed and/or eligible for central clearing must be excluded from the RRAO for other residual risks as defined in MAR23.4. Any instrument that is listed and/or eligible for central clearing with an exotic underlying must be included in the RRAO.

Can total return swap (TRS) products be netted with the underlying product(s) that drive the value of the TRS for the purposes of the RRAO?

As per MAR23.7, a TRS on an underlying product may be excluded from the RRAO capital requirement if there is an equal and opposite exposure in the same TRS. If no exactly matching transaction exists, the entire notional of the TRS would be allocated to the RRAO.
Consider a bank that invests in an equity position (a long position) and sells it forward (a short position) to another bank (with maturity of forward sale below one year). Is it correct that both banks in this example will include a long position on the equity exposure, ie the selling bank cannot net the forward sale (as it has less than one year maturity) and the buying bank must recognise the forward purchase (as all long positions are added irrespective of maturity)? Also, given the fact that cash equity has no legal maturity, how does the maturity matching requirement apply?

In the example both banks will be considered to have long positions on the equity exposure. Furthermore, the Basel III rules require that the maturity of the short position must either match the maturity of the long position or have a residual maturity of at least one year. Therefore, in the case of cash equity positions the short position must have a residual maturity of at least one year to be considered to offset the cash equity position. However, after considering this issue, the Basel Committee has concluded that, for positions in the trading book, if the bank has a contractual right/obligation to sell a long position at a specific point in time and the counterparty in the contract has an obligation to purchase the long position if the bank exercises its right to sell, this point in time may be treated as the maturity of the long position. Therefore if these conditions are met, the maturity of the long position and the short position are deemed to be matched even if the maturity of the short position is within one year.

Calculation of the residual risk add-on

The residual risk add-on must be calculated in addition to any other capital requirements within the standardised approach. The residual risk add-on is to be calculated as follows.

(1) The scope of instruments that are subject to the RRAO must not have an impact in terms of increasing or decreasing the scope of risk factors subject to the delta, vega, curvature or DRC treatments in the standardised approach.
(2) The RRAO is the simple sum of gross notional amounts of the instruments bearing residual risks, multiplied by a risk weight.

(a) The risk weight for instruments with an exotic underlying specified in MAR23.3 is 1.0%.

(b) The risk weight for instruments bearing other residual risks specified in MAR23.4 is 0.1%.²

Footnotes
² Where the bank cannot satisfy the supervisor that the RRAO provides a sufficiently prudent capital charge, the supervisor will address any potentially under-capitalised risks by imposing a conservative additional capital charge under Pillar 2.