

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to ‘market risk’, ‘CVA’ and ‘operational risk’. Provisions relating to credit risk will be the subject of another near-final policy statement.

PRA RULEBOOK: CRR FIRMS: (CRR) INSTRUMENT [2024]

Powers exercised

- A. The Prudential Regulation Authority (“PRA”) makes this instrument in the exercise of the following powers and related provisions in the Financial Services and Markets Act 2000 (“the Act”):
- (1) section 137G (The PRA’s general rules);
 - (2) section 137T (General supplementary powers);
 - (3) section 144G(1) (Disapplication or modification of CRR rules in individual cases);
 - (4) section 144H(1) and (2) (Relationship with the CRR);
 - (5) section 192XA (Rules applying to holding companies); and
 - (6) section 192XC (Disapplication or modification of rules in individual cases).
- B. The rule-making powers referred to above are specified for the purpose of section 138G(2) (Rule-making instrument) of the Act.

PRA Rulebook: CRR Firms: (CRR) Instrument [2024]

- C. The PRA makes the rules in the Annexes to this instrument.¹

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¹ In this near-final instrument Annexes B, C, D, E, F, M, N, U, V, W and X are left intentionally blank.

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

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Notes

D. In the Annexes to this instrument, the “notes” (indicated by “[Note:]”) are included for the convenience of readers but do not form part of the legislative text.

Commencement

E. All Annexes to this instrument, except Annex H, come into force on [1 July 2025].

F. Annex H to this instrument comes into force on [1 July 2025], except Article 325bh and Paragraph 7(b) of Annex 1, which come into force on [1 January 2026].

Citation

G. This instrument may be cited as the PRA Rulebook: CRR Firms: (CRR) Instrument [2024].

By order of the Prudential Regulation Committee

[DATE]

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Annex A

Amendments to the Glossary Part

In this Annex, new text is underlined and deleted text is struck through.²

...

ACTP

means the alternative correlation trading portfolio as determined in accordance with the Market Risk: General Provisions (CRR) Part.

...

Advanced IRB Approach

means:

(1) in relation to PDs, the approach referred to in Credit Risk: Internal Ratings Based Approach (CRR) Part Article 151(6);

(2) in relation to LGDs and conversion factors or expected amounts outstanding at default, the approach referred to in point (a) of Credit Risk: Internal Ratings Based Approach (CRR) Part Article 151(7); and

(3) in relation to Maturity for exposures to corporates and institutions, the approach referred to in Credit Risk: Internal Ratings Based Approach (CRR) Part Article 162.

BA-CVA

means the basic approach to the calculation of own funds requirements for CVA risk set out in Chapter 4 of the Credit Valuation Adjustment Risk Part.

...

commitment

means any off-balance sheet contractual arrangement that has been offered by the institution and accepted by the obligor, including to extend credit, purchase assets or issue off-balance sheet items (but which is not itself an issued off-balance sheet item). This includes but is not limited to any such arrangement that may be:

(1) unconditionally cancelled by the institution at any time without prior notice to the obligor; or

(2) cancelled by the institution if the obligor fails to meet conditions set out in the relevant agreement, including conditions that must be met by the obligor prior to any initial or subsequent drawdown under the arrangement.

...

credit risk risk-weighted exposure amount

means the sum of points (a) and (f) of Required Level of Own Funds (CRR) Part Article 92(3).

...

CVA

² Glossary terms which are relevant to Annexes B, C, D, E, F, M, N, U, V, W and X may change.

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means an adjustment of the default risk-free price of a derivative or securities financing transaction due to a potential default of the counterparty.

CVA risk

means the risk of losses arising from changing CVA values in response to changes in counterparty credit spreads and market risk factors that drive prices of derivative transactions and securities financing transactions.

...

Financial Collateral Comprehensive Method

means the method set out in Credit Risk Mitigation (CRR) Part Article 223 for calculating an exposure value which takes into account both price volatility and the risk mitigating effects of collateral held.

...

Foundation Collateral Method

means the method set out in Credit Risk Mitigation (CRR) Part Articles 229 to 231 for calculating risk-weighted exposure amounts and expected loss amounts.

Foundation IRB Approach

means:

(1) in relation to PDs, the approach referred to in Credit Risk: Internal Ratings Based Approach (CRR) Part Article 151(6);

(2) in relation to LGDs, the approach referred to in point (a) of Credit Risk: Internal Ratings Based Approach (CRR) Part Article 151(7); and

(3) in relation to maturity for exposures to corporates and institutions, the approach referred to in Credit Risk: Internal Ratings Based Approach (CRR) Part Article 162.

...

IRB Approach

has the meaning given in rule 1.1 of the Credit Risk: Internal Ratings Based Approach (CRR) Part.

...

LGD Adjustment Method

means the method set out in Credit Risk: Internal Ratings Based Approach (CRR) Part Article 183.

LGD Modelling Collateral Method

means the method set out in Credit Risk: Internal Ratings Based Approach (CRR) Part Article 169A(1).

...

multilateral development bank

means an organisation created by a group of countries with:

(1) independent legal and operational status;

(2) large sovereign membership; and

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(3) whose purpose is to provide financing and professional advice for economic and social development projects.

...

Parameter Substitution Method

means calculating:

(1) the risk weight in accordance with the formula in Credit Risk Mitigation (CRR) Part Article 236(1); and

(2) expected loss in accordance with the formula in Credit Risk Mitigation (CRR) Part Article 236(1A).

...

revolving facilities

means any facility where the outstanding balance owed by the obligor is permitted to fluctuate based on its decisions to borrow and repay, up to an agreed limit and in accordance with the terms of the facility agreement.

...

Risk-Weight Substitution Method

means calculating:

(1) the risk weight in accordance with the formula in Credit Risk Mitigation (CRR) Part Article 235(1); and

(2) where the exposure is subject to the IRB Approach, expected loss in accordance with the formula in Credit Risk Mitigation (CRR) Part Article 235(1A).

...

SA-CVA

means the standardised approach to the calculation of own funds requirements for CVA risk set out in Chapter 5 of the Credit Valuation Adjustment Risk Part.

...

Slotting Approach

means the approach set out in Credit Risk: Internal Ratings Based Approach (CRR) Part Article 153(5) in relation to specialised lending.

...

Standardised Approach

means the approach set out in the Credit Risk: Standardised Approach (CRR) Part.

...

transactor exposure

means an exposure to an obligor for the following revolving facilities:

(1) revolving facilities where:

(a) the balance to be repaid at each scheduled repayment date is determined as the amount drawn at a pre-defined reference date (including credit cards and charge cards); and

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(b) the balance has been repaid in full at each scheduled repayment date for the previous 12 month period; and

(2) an overdraft facility which has not been drawn down over the previous 12 month period.

...

venture capital

means an equity exposure that is:

(1) not listed on a recognised exchange; and

(2) held with the objective of providing funding to a newly established enterprise, including for:

(a) the development of a new product or related research to bring the product to the market;

(b) the build-up of the production capacity of the enterprise; or

(c) for the expansion of the business of the enterprise.

...

Near-final part 1

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

Annex B

Required Level of Own Funds (CRR)

This Annex is left intentionally blank.

Near-final part 1

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

Annex C

Credit Risk: General Provisions (CRR)

This Annex is left intentionally blank.

Near-final part 1

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

Annex D

Credit Risk: Standardised Approach (CRR)

This Annex is left intentionally blank.

Near-final part 1

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

Annex E

Credit Risk: Internal Ratings Based Approach (CRR)

This Annex is left intentionally blank.

Near-final part 1

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

Annex F

Credit Risk Mitigation (CRR)

This Annex is left intentionally blank.

Near-final part 1

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Annex G

Market Risk: General Provisions (CRR) Part

In this Annex, the text is all new and is not underlined.

Part

MARKET RISK: GENERAL PROVISIONS (CRR)

Chapter content

1. APPLICATION AND DEFINITIONS
2. LEVEL OF APPLICATION
3. ORGANISATIONAL STRUCTURE AND CONTROL MECHANISMS
4. GENERAL PROVISIONS (PART THREE, TITLE IV, CHAPTER 1 CRR)
 - ARTICLE 325 APPROACHES FOR CALCULATING THE OWN FUNDS REQUIREMENTS FOR MARKET RISK
 - ARTICLE 325a1 TREATMENT OF NON-TRADING BOOK POSITIONS SUBJECT TO FOREIGN EXCHANGE RISK OR COMMODITY RISK
 - ARTICLE 325a CRITERIA FOR USING THE SIMPLIFIED STANDARDISED APPROACH
 - ARTICLE 325b1 INSTRUMENTS FOR WHICH NO TREATMENT SPECIFIED
 - ARTICLE 325b PERMISSION FOR CONSOLIDATED REQUIREMENTS

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

1 APPLICATION AND DEFINITIONS

1.1 This Part applies to:

- (a) a *firm* that is a *CRR firm* but not an *ICR firm*; and
- (b) a *CRR consolidation entity* that is not an *ICR consolidation entity*.

1.2 In this Part, the following definition shall apply:

non-trading book position

means a position which is held by an institution and which is not held in the trading book.

2 LEVEL OF APPLICATION

Application of requirements on an individual basis

2.1 An institution shall comply with this Part on an individual basis.

[Note: Rule 2.1 sets out an equivalent provision to Article 6(1) of *CRR* that applies to this Part]

2.2 Where an institution has been given permission under Article 9(1) of *CRR* it shall incorporate relevant subsidiaries in the calculation undertaken to comply with rule 2.1.

[Note: Rule 2.2 applies Article 9(1) of *CRR* to this Part where a permission under that Article has been given]

Application of requirements on a consolidated basis

2.3 A *CRR consolidation entity* shall comply with this Part on the basis of its consolidated situation.

[Note: Rule 2.3 sets out an equivalent provision to the first sentence of Article 11(1) of *CRR* that applies to this Part]

2.4 For the purposes of applying this Part on a consolidated basis, the terms 'institution' and 'UK parent institution' shall include a *CRR consolidation entity* (if it would not otherwise have been included).

[Note: Rule 2.4 sets out an equivalent provision to the first sub-paragraph of Article 11(2) of *CRR* that applies to this Part]

2.5 The expression 'consolidated situation' applies for the purposes of this Part as it does for the purposes of Parts Two and Three of *CRR*.

[Note: The term 'consolidated situation' is defined in Article 4(1)(47) of *CRR*]

Application of requirements on a sub-consolidated basis

2.6 An institution that is required to comply with Parts Two and Three of *CRR* on a sub-consolidated basis, shall comply with this Part on the same basis.

[Note: This rule sets out Article 11(6) of *CRR* that it applies to this Part]

3 ORGANISATIONAL STRUCTURE AND CONTROL MECHANISMS

3.1 A *CRR consolidation entity* and an institution shall set up a proper organisational structure and appropriate internal control mechanisms in order to ensure that the data required for consolidation for the purposes of this Part are duly processed and forwarded.

[Note: Rule 2.7 sets out an equivalent provision to the second sentence of Article 11(1) of *CRR* that applies to this Part]

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3.2 A *CRR consolidation entity* and an institution shall ensure that a subsidiary not subject to this Part implements arrangements, processes and mechanisms to ensure proper consolidation for the purposes of this Part.

[Note: Rule 2.8 sets out an equivalent provision to the third sentence of Article 11(1) of *CRR* that applies to this Part]

4 GENERAL PROVISIONS (PART THREE, TITLE IV, CHAPTER 1 CRR)

ARTICLE 325 APPROACHES FOR CALCULATING THE OWN FUNDS REQUIREMENTS FOR MARKET RISK

General Approach

1. An institution shall calculate the own funds requirements for market risk of all trading book positions and in relation to *non-trading book positions* that are subject to foreign exchange risk or commodity risk in accordance with the following approaches:
 - (a) the advanced standardised approach set out in the Market Risk: Advanced Standardised Approach (CRR) Part;
 - (b) the simplified standardised approach referred to in paragraph 2, if it meets the conditions set out in Article 325a; or
 - (c) the internal model approach set out in the Market Risk: Internal Model Approach (CRR) Part, subject to the prior permission of the *PRA* in accordance with Market Risk: Internal Model Approach (CRR) Part Article 325az.
2. The own funds requirements for market risk calculated in accordance with the simplified standardised approach referred to in point (b) of paragraph 1 shall mean the sum of the following own funds requirements, as applicable:
 - (a) the own funds requirements for position risk referred to in the Market Risk: Simplified Standardised Approach (CRR) Part, multiplied by:
 - (i) 1.3 for own funds requirements relating to general and specific risk of positions in debt instruments as calculated in accordance with Market Risk: Simplified Standardised Approach (CRR) Part Articles 334 to 340;
 - (ii) 3.5 for own funds requirements relating to the general and specific risks of positions in equity instruments, as calculated in accordance with Market Risk: Simplified Standardised Approach (CRR) Part Articles 341 to 344, 346 and 347; and
 - (iii) 3.5 for own funds requirements calculated in accordance with Market Risk: Simplified Standardised Approach (CRR) Part Article 348 for CIUs;
 - (b) the own funds requirements for foreign exchange risk referred to in Market Risk: Simplified Standardised Approach (CRR) Part Articles 351 to 354, multiplied by 1.2; and
 - (c) the own funds requirements for commodity risk referred to in Market Risk: Simplified Standardised Approach (CRR) Part Articles 355 to 361, multiplied by 1.9.
3. [Note: Provision left blank]
4. An institution may use in combination the approaches set out in points (a) and (c) of paragraph 1 of this Article on a permanent basis within a group.
5. An institution shall not use the approach set out in point (c) of paragraph 1 for instruments in their trading book that are securitisation positions or positions included in the *ACTP* as set out in paragraphs 6, 7 and 8 of this Article.

ACTP

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6. An institution shall include securitisation positions and nth-to-default credit derivatives that meet all the following criteria in the *ACTP*:
 - (a) the positions are neither re-securitisation positions, nor options on a securitisation tranche, nor any other derivatives of securitisation exposures that do not provide a pro-rata share in the proceeds of a securitisation tranche; and
 - (b) all their underlying instruments are:
 - (i) single-name instruments, including single-name credit derivatives, for which a liquid two-way market exists; and
 - (ii) commonly-traded indices based on the instruments referred to in point (i).

A two-way market is considered to exist where there are independent bona fide offers to buy and sell, so that a price that is reasonably related to the last sales price or current bona fide competitive bid and offer quotations can be determined within one day and settled at that price within a relatively short time conforming to trade custom.
7. An institution shall not include positions with any of the following underlying instruments in the *ACTP*:
 - (a) underlying instruments that are assigned to the exposure classes referred to in point (h) or (i) of Credit Risk: Standardised Approach (CRR) Part Article 112(1); and/or
 - (b) a claim on a special purpose entity, collateralised, directly or indirectly, by a position that, in accordance with paragraph 6, would itself not be eligible for inclusion in the *ACTP*.
8. An institution may include in the *ACTP* positions that are neither securitisation positions nor nth-to-default credit derivatives but that hedge other positions in that portfolio, provided that a liquid two-way market as described in paragraph 6 exists for the instrument or its underlying instruments.

Structural FX

9. Any risk positions which an institution uses to hedge against the adverse effect of foreign exchange rates on any of its capital ratios in accordance with Required Level of Own Funds (CRR) Part Article 92 may be excluded by an institution from the calculation of own funds requirements for foreign exchange risk set out in paragraph 1 of this Article, with the prior permission of the *PRA* to the extent and subject to any modifications set out in the permission if, on applying for such permission, an institute is able to demonstrate to the satisfaction of the *PRA*:
 - (a) the risk positions are deliberately taken or maintained for the purpose of hedging partially or totally against the potential that changes in foreign exchange rates could have an adverse effect on its capital ratios;
 - (b) the risk positions are of a non-dealing or structural nature;
 - (c) the amount of the risk position excluded is limited to the amount that neutralises the sensitivity of the capital ratio to movements in foreign exchange rates;
 - (d) the risk positions are excluded from the calculation of own funds requirements for at least six months;
 - (e) the risk positions excluded are established and managed in accordance with a clear risk management policy that the *PRA* has approved; and
 - (f) the risk positions excluded are documented and can be made available for the *PRA*.

An institution that has been granted the permission set out in the first sub-paragraph shall comply with the requirements set out in that first sub-paragraph.

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[Note: This is a permission created under sections 144G(2) and 192XC of *FSMA* to which Part 8 of the *Capital Requirements Regulations* applies]

Approach to CIUs in the trading book

10. An institution shall not use the approach set out in point (c) of paragraph 1 of Article 325 for CIUs in their trading book that cannot be looked through.

[Note: Paragraphs 1 to 8 of this rule correspond to paragraphs 1 to 8 of Article 325 of *CRR* as it applied immediately before revocation by the *Treasury* and paragraph 9 of this rule corresponds to paragraph 2 of Article 352 of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 325a1 TREATMENT OF NON-TRADING BOOK POSITIONS SUBJECT TO FOREIGN EXCHANGE RISK OR COMMODITY RISK

Calculation of the own funds requirements under the advanced standardised approach for non-trading book positions subject to foreign exchange risk

1. Where calculating the own funds requirement for *non-trading book positions* subject to foreign exchange risk under the sensitivities-based method in accordance with of Market Risk: Advanced Standardised Approach (CRR) Part Articles 325d to 325j, with the exception of those positions subject to commodity risk as detailed in paragraph 5, an institution shall use the last available accounting value of a *non-trading book position* that is subject to foreign exchange risk as a basis.
2. By way of derogation from paragraph 1, an institution may use the last available fair value of a *non-trading book position* that is subject to foreign exchange risk, provided that the fair value of all *non-trading book positions* is calculated at least on a quarterly basis. Where an institution applies this paragraph, it shall apply it consistently to all *non-trading book positions* subject to foreign exchange risk.
3. An institution shall update the last available value that is used as a basis for computing the own funds for foreign exchange risk in accordance with paragraphs 1 and 2 at least on a monthly basis in order to reflect changes in the value of the foreign exchange risk factors.
4. Where an institution computes the own funds requirements for market risk on a consolidated basis, the institution shall identify the currency of denomination of an item as the reporting currency of the institution which recognises that item in its individual financial statement, where all of the following conditions are met:
 - (a) the item is not measured at fair value;
 - (b) the item is subject to the risk of impairment due to foreign exchange risk;
 - (c) the institution's reporting currency or base currency differs from the reporting currency of the institution that recognises the item in its individual financial statement; and
 - (d) the item's accounting value is not updated at each reporting date to reflect the changes in the exchange rate between the foreign currency and the reporting currency of the institution recognising the item in its individual financial statement.

Calculation of the own funds requirements under the advanced standardised approach for non-trading book positions subject to commodity risk

5. Where calculating the own funds requirement for *non-trading book positions* subject to commodity risk under the sensitivities-based method in accordance with Market Risk: Advanced Standardised Approach (CRR) Part Articles 325d to 325j, an institution shall use the latest available fair value of those positions as a basis. An institution shall fair value those positions at least on a monthly basis.

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Calculation of the own funds requirements under the internal model approach for non-trading book positions subject to foreign exchange risk and not to commodity risk

6. Where calculating the own funds requirements for *non-trading book positions* subject to foreign exchange risk and not to commodity risk assigned to trading desks in accordance with the internal model approach as set out in the Market Risk: Internal Model Approach (CRR) Part, an institution shall use the last available accounting value of a *non-trading book position* that is subject to foreign exchange risk as a basis.
7. By way of derogation from paragraph 6, an institution may use the last available fair value of a *non-trading book position* as referred to in paragraph 6 as a basis for calculating the own funds requirements, provided that the fair value of all *non-trading book positions* is calculated at least on a quarterly basis. Where an institution applies this paragraph, it shall apply it consistently to all *non-trading book positions* referred to in paragraph 6.
8. An institution shall update the last available value that is used as a basis for computing the own funds for foreign exchange risk in accordance with paragraphs 6 and 7 on a daily basis in order to reflect changes in the value of the foreign exchange risk factors.
9. By way of derogation from paragraph 8, when updating the last available value of a *non-trading book position* on a daily basis, an institution shall reflect changes in the value of all risk factors for a position for which it used the derogation referred to in paragraph 15.
10. For the purposes of calculating the expected shortfall risk measure referred to in Market Risk: Internal Model Approach (CRR) Part Article 325bb and the stress scenario risk measure referred to in Market Risk: Internal Model Approach (CRR) Part Article 325bk in relation to *non-trading book positions* subject to foreign exchange risk and not to commodity risk, an institution shall apply scenarios of future shock only to risk factors that belong to the foreign exchange broad risk factor category.

Calculation of the own funds requirements under the internal model approach for non-trading book positions subject to commodity risk

11. Where calculating the own funds requirements for *non-trading book positions* subject either to commodity risk or both to commodity and foreign exchange risk assigned to trading desks in accordance with the internal model approach as set out in the Market Risk: Internal Model Approach (CRR) Part, an institution shall use the last available fair value of those positions. An institution shall fair value those positions on a daily basis.
12. In relation to *non-trading book positions* subject to commodity risk and not to foreign exchange risk, an institution shall apply scenarios of future shock, for the purposes of calculating the expected shortfall risk measure referred to in Market Risk: Internal Model Approach (CRR) Part Article 325bb or the stress scenario risk measure referred to in Market Risk: Internal Model Approach (CRR) Part Article 325bk, only to risk factors that belong to the commodity broad risk factor category.
13. In relation to *non-trading book positions* subject to commodity risk and foreign exchange risk, an institution shall apply scenarios of future shock for the purpose of calculating the expected shortfall risk measure referred to in Market Risk: Internal Model Approach (CRR) Part Article 325bb or the stress scenario risk measure referred to in Market Risk: Internal Model Approach (CRR) Part Article 325bk, only to risk factors that belong to the commodity or foreign exchange broad risk factor category.

Computation of the hypothetical and actual changes related to non-trading book positions subject to foreign exchange risk or commodity risk under Market Risk: Internal Model Approach (CRR) Part Articles 325bf and 325bg

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14. By way of derogation from paragraphs 9 to 12 of Market Risk: Internal Model Approach (CRR) Part Article 325bf, an institution computing the hypothetical and the actual changes in the portfolio's value referred to in Market Risk: Internal Model Approach (CRR) Part Articles 325bf and 325bg in relation to a *non-trading book position* which is subject to foreign exchange risk and not to commodity risk shall calculate the value of that *non-trading book position* at the end of the day following the computation of the value-at-risk number referred to in Market Risk: Internal Model Approach (CRR) Part Article 325bf using the value of that *non-trading book position* at the end of the previous day and updating its component reflecting the foreign exchange risk.
15. Where the value of a *non-trading book position* does not change linearly with movements in an exchange rate to which it is subject, an institution may, in derogation from paragraph 14, calculate the value of that *non-trading book position* at the end of the day following the computation of the value-at-risk number by using the value of that *non-trading book position* at the end of the previous day and updating all the components the institution uses to value that *non-trading book position*, including those components not pertaining to the foreign exchange risk broad risk factor category.

An institution shall apply the first sub-paragraph consistently to all positions in the trading desk that do not change linearly with movements in an exchange rate to which they are subject.
16. By way of derogation from paragraphs 9 to 12 of Market Risk: Internal Model Approach (CRR) Part Article 325bf, an institution computing the hypothetical and the actual changes in the portfolio's value referred to in Market Risk: Internal Model Approach (CRR) Part Articles 325bf and 325bg in relation to a *non-trading book position* which is subject to commodity risk shall calculate the value of that *non-trading book position* at the end of the day following the computation of the value-at-risk number referred to in Market Risk: Internal Model Approach (CRR) Part Article 325bf of that Regulation in accordance with either of the following, provided that they use it consistently for all *non-trading book positions* subject to commodity risk in the trading desk:
 - (a) an institution shall use the value of that *non-trading book position* at the end of the previous day and update only the components reflecting the foreign exchange and commodity risk; or
 - (b) an institution shall use the value of that *non-trading book position* at the end of the previous day and update all the components the institution uses to value that *non-trading book position*, including those not pertaining to the foreign exchange or commodity risk broad risk factor categories.
17. An institution shall apply paragraphs 14 to 16 only to *non-trading book positions* that are included both in the portfolio on the day of the computation of the Value-At-Risk number referred to in Market Risk: Internal Model Approach (CRR) Part Article 325bf, and in the portfolio on the day following the computation of that Value-At-Risk number.

ARTICLE 325a CRITERIA FOR USING THE SIMPLIFIED STANDARDISED APPROACH

1. An institution shall be eligible to use the approach set out in point (b) of paragraph 1 of Article 325 to calculate the own funds requirements for market risk of all trading book positions and *non-trading book positions* that are subject to foreign exchange risk or commodity risk, provided that the size of the institution's on- and off-balance-sheet business that is subject to market risk is equal to or less than each of the following thresholds, on the basis of an assessment carried out on a monthly basis using data as of the last day of the month:
 - (a) 10% of the institution's *total assets*; and
 - (b) £440 million.

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

2. An institution shall calculate the size of its on- and off-balance-sheet business that is subject to market risk using data as of the last day of each month in accordance with the following requirements:
 - (a) all the positions assigned to the trading book shall be included, except credit derivatives that are recognised as internal hedges against non-trading book credit risk exposures and the credit derivative transactions that perfectly offset the market risk of the internal hedges as referred to in paragraph 3 of Trading Book (CRR) Part Article 106;
 - (b) all *non-trading book positions* that are subject to foreign exchange risk or commodity risk shall be included;
 - (c) all positions shall be valued at their *market values* on that date, except for:
 - (i) positions referred to in point (b);
 - (ii) where the *market value* of a trading book position is not available on a given date, an institution shall take a fair value for the trading book position on that date;
 - (iii) where the fair value and *market value* of a trading book position are not available on a given date, an institution shall take the most recent *market value* or fair value for that position;
 - (d) all *non-trading book positions* that are subject to foreign exchange risk shall be considered as an overall net foreign exchange position and valued in accordance with Market Risk: Simplified Standardised Approach (CRR) Part Article 352;
 - (e) all the *non-trading book positions* that are subject to commodity risk shall be valued in accordance with Market Risk: Simplified Standardised Approach (CRR) Part Articles 357 and 358;
 - (f) the absolute value of long positions shall be added to the absolute value of short positions.
3. An institution shall immediately notify the *PRA* when they:
 - (a) are both eligible to calculate and elect to calculate; or
 - (b) cease being eligible to calculate,their own funds requirements for market risk in accordance with this Article.
4. An institution that no longer meets one or more of the conditions set out in paragraph 1 shall immediately notify the *PRA* thereof.
5. An institution shall cease to be eligible to use the simplified standardised approach referred to in point (b) of paragraph 1 of Article 325 to calculate the own funds requirements for market risk of all trading book positions and *non-trading book positions* that are subject to foreign exchange risk or commodity risk on the date falling three months after the occurrence of either of the following cases:
 - (a) the institution does not meet the condition set out in point (a) or (b) of paragraph 1 for three consecutive months; or
 - (b) the institution does not meet the condition set out in point (a) or (b) of paragraph 1 during more than 6 out of the last 12 months.
6. Where an institution ceases to be eligible to use the approach set out in point (b) of paragraph 1 of Article 325 to calculate the own funds requirements for market risk of all trading book positions and *non-trading book positions* that are subject to foreign exchange risk or commodity risk in accordance with paragraph 5 of this Article, the institution must notify the *PRA* that all the conditions set out in paragraph 1 of this Article have been met for an uninterrupted 12-month period prior to recommencing use of that approach.

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

7. An institution shall not enter into, buy or sell a position only for the purpose of complying with any of the conditions set out in paragraph 1 during the monthly assessment.
8. An institution that is eligible for the treatment set out in Trading Book (CRR) Part Article 94 shall be eligible use the approach set out in point (b) of paragraph 1 of Article 325 to calculate the own funds requirements for market risk of *non-trading book positions* that are subject to foreign exchange risk or commodity risk.

[Note: This rule corresponds to Article 325a of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 325b1 INSTRUMENTS FOR WHICH NO TREATMENT SPECIFIED

1. Where an institution has a position in a financial instrument for which no treatment has been specified in *CRR* or *CRR rules*, it must calculate its own funds requirement for that position by applying the most appropriate rules relating to positions that are specified in *CRR* or *CRR rules*, if doing so is prudent and appropriate, and if the position is sufficiently similar to those covered by the relevant rules.
2. An institution must document its policies and procedures for calculating own funds for such positions in its trading book policy statement.
3. If there are no appropriate treatments the institution must calculate an own funds requirement of an appropriate percentage of the current value of the position. An appropriate percentage is either 100%, or a percentage that takes into account the characteristics of the position.
4. For the purposes of paragraph 2, trading book policy statement means the statement of policies and procedures relating to the trading book.

ARTICLE 325b PERMISSION FOR CONSOLIDATED REQUIREMENTS

1. Subject to paragraph 2, and only for the purpose of calculating net positions and own funds requirements for market risk on a consolidated basis, institutions may use positions in one institution or *undertaking* to offset positions in another institution or *undertaking*.
2. An institution may only apply paragraph 1 with the prior permission of the *PRA* to the extent and subject to any modifications set out in the permission if, on applying for such permission, it is able to demonstrate to the satisfaction of the *PRA*:
 - (a) there is a satisfactory allocation of own funds within the group; and
 - (b) the regulatory, legal or contractual framework in which the institution operates guarantees mutual financial support within the group.

An institution that has been granted the permission set out in the first sub-paragraph shall comply with the requirements set out in that first sub-paragraph.

[Note: This is a permission created under sections 144G(2) and 192XC of *FSMA* to which Part 8 of the *Capital Requirements Regulations* applies]

3. Where there are *undertakings* located in *third countries*, all the following conditions shall be met in addition to those set out in paragraph 2:
 - (a) such *undertakings* have been authorised in a *third country* and either satisfy the definition of a credit institution or are *third country investment firms*;
 - (b) on an individual basis, such *undertakings* comply with own funds requirements equivalent to those laid down in *CRR* and *CRR rules*; and
 - (c) no regulations exist in the *third countries* in question which might significantly affect the transfer of funds within the group.

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

4. Where the *PRA* has granted the permission in paragraph 2, an institution shall calculate the own funds requirements for market risk on a consolidated basis for all institutions and *undertakings* which have been granted such permission as the sum of:
 - (a) the own funds requirements for market risk for all the positions that have been allocated to a dedicated general interest rate internal hedge portfolio in accordance with Trading Book (CRR) Part Article 106(9); and
 - (b) the own funds requirements for market risk for all the positions that have not been allocated to a dedicated general interest rate internal hedge portfolio in accordance with Trading Book (CRR) Part Article 106(9).
5. Where the *PRA* has not granted the permission in paragraph 2 for all institutions or *undertakings* in a group, an institution shall calculate the own funds requirements for market risk for that group as the sum of:
 - (a) the own funds requirements calculated in accordance with paragraph 4 above; and
 - (b) the sum of own funds requirements for each institution or *undertaking* that has not been granted the permission in paragraph 2, each calculated on an individual basis and in accordance with sub-paragraphs (a) and (b) of paragraph 4.

[Note: This rule corresponds to Article 325b of *CRR* as it applied immediately before revocation by the *Treasury*]

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

Annex H

Market Risk: Internal Model Approach (CRR) Part

In this Annex, the text is all new and is not underlined.

Part

MARKET RISK: INTERNAL MODEL APPROACH (CRR)

Chapter content

1. APPLICATION AND DEFINITIONS
2. LEVEL OF APPLICATION
3. ORGANISATIONAL STRUCTURE AND CONTROL MECHANISMS
4. TRANSITIONALS
5. CAPITAL REQUIREMENTS FOR MARKET RISK INTERNAL MODEL APPROACH (CRR)
 - Article 325az PERMISSION TO USE INTERNAL MODELS
 - Article 325azx MATERIAL CHANGES AND EXTENSIONS TO PERMISSION
 - Article 325ba OWN FUNDS REQUIREMENTS WHEN USING INTERNAL MODELS
 - Article 325bb EXPECTED SHORTFALL RISK MEASURE
 - Article 325bc PARTIAL EXPECTED SHORTFALL CALCULATIONS
 - Article 325bd LIQUIDITY HORIZONS
 - Article 325bdx MAPPING OF RISK FACTORS
 - Article 325be ASSESSMENT OF THE MODELLABILITY OF RISK FACTORS
 - Article 325bf REGULATORY BACK-TESTING REQUIREMENTS AND MULTIPLICATION FACTORS
 - Article 325bg PROFIT AND LOSS ATTRIBUTION REQUIREMENT
 - Article 325bh REQUIREMENTS ON RISK MEASUREMENT
 - Article 325bi QUALITATIVE REQUIREMENTS
 - Article 325bj INTERNAL VALIDATION
 - Article 325bk CALCULATION OF STRESS SCENARIO RISK MEASURE
 - Article 325bl SCOPE OF THE INTERNAL DEFAULT RISK MODEL
 - Article 325bm PERMISSION TO USE AN INTERNAL DEFAULT RISK MODEL
 - Article 325bn OWN FUNDS REQUIREMENTS FOR DEFAULT RISK USING AN INTERNAL DEFAULT RISK MODEL
 - Article 325bo RECOGNITION OF HEDGES IN AN INTERNAL DEFAULT RISK MODEL
 - Article 325bp PARTICULAR REQUIREMENTS FOR AN INTERNAL DEFAULT RISK MODEL
- Annex 1 STANDARDS FOR GRANT OF IMA PERMISSION
- Annex 2 MATERIAL EXTENSIONS AND CHANGES TO INTERNAL MODELS

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

1 APPLICATION AND DEFINITIONS

1.1 Subject to 1.2, this Part applies to

- (1) a *CRR firm* that is not an *ICR firm*; and
- (2) a *CRR consolidation entity* that is not an *ICR consolidation entity*,

which for the purposes of calculating own funds for requirements for market risk for a portfolio of all positions (other than *ineligible positions*) assigned to a trading desk in respect of those positions has a permission from the *PRA* (an *IMA permission*) to:

- (a) except as otherwise provided in this Part, disapply the provisions of:
 - (i) Market Risk: Simplified Standardised Approach (CRR) Part; and
 - (ii) Market Risk: Advanced Standardised Approach (CRR) Part; and
- (b) apply the requirements of this Part, to the extent, and subject to any modifications, set out in the permission.

[Note: This is a permission created under sections 144G and 192XC of *FSMA* to which Part 8 of the *Capital Requirements Regulations* applies]

[Note: This rule corresponds to Article 325az(2) of *CRR* as it applied immediately before revocation by the *Treasury*]

1.2. In this Part, Article 325az(1A) applies to an institution which is applying for an *IMA permission*.

1.3 In this Part, the following definitions shall apply:

back-testing requirements

means the requirements in respect of back-testing set out in Article 325bf(3).

IMA permission

means the permission granted by the *PRA* referred to in 1.1.

IMA standards

means the standards set out in Annex 1.

ineligible position

means a position which is:

- (1) a securitisation or re-securitisation position or a position that is included in the *ACTP*; or
- (2) a *CIU* position (other than a *CIU* position of the type specified out in Article 325az(9)) for which the institution is unable to look through to the underlying positions of the *CIU*.

internal default risk model

means an internal default risk model for which the institution has been granted a permission to use by the *PRA* as part of its *IMA permission* and as further specified in Section 3 of this Part.

Kolmogorov-Smirnov test metric

has the meaning set out in paragraphs 4 and 6 of Article 325bg.

multilateral systems

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

means any system or facility in which multiple third-party buying and selling trading interests in *financial instruments* are able to interact in the system.

non-trading book position

means a position which is held by an institution and which is not held in the trading book.

P&L attribution requirements

means the profit and loss attribution requirements for a trading desk set out in Article 325bg.

quarterly reporting reference date

means 31 March, 30 June, 30 September and 31 December.

risk measurement model

means the risk measurement model used for the purpose of calculating the partial expected shortfall calculations referred to in Article 325bc of this Part.

Spearman correlation coefficient

has the meaning set out in paragraphs 4 and 5 of Article 325bg.

third-party vendor

means an undertaking that provides data on transactions or quotations to institutions for the purpose of Article 1, including data reporting service providers as defined in the Data Reporting Service Regulations 2017 and *multilateral systems*.

- 1.4 Except as otherwise provided in this Part, references to a trading desk shall include a notional trading desk as referred to in Article 104b(3) and (4) of the Trading Book (CRR) Part.

2 LEVEL OF APPLICATION

Application of requirements on an individual basis

- 2.1 An institution shall comply with this Part on an individual basis.

[Note: Rule 2.1 sets out an equivalent provision to Article 6(1) of *CRR* that applies to this Part]

- 2.2 Where an institution has been given permission under Article 9(1) of *CRR* it shall incorporate relevant subsidiaries in the calculation undertaken to comply with rule 2.1.

[Note: Rule 2.2 applies Article 9(1) of *CRR* to this Part where a permission under that Article has been given]

Application of requirements on a consolidated basis

- 2.3 A *CRR consolidation entity* shall comply with this Part on the basis of its consolidated situation.

[Note: Rule 2.3 sets out an equivalent provision to the first sentence of Article 11(1) of *CRR* that applies to this Part]

- 2.4 For the purposes of applying this Part on a consolidated basis, the terms 'institution' and 'UK parent institution' shall include a *CRR consolidation entity* (if it would not otherwise have been included).

[Note: Rule 2.4 sets out an equivalent provision to the first sub-paragraph of Article 11(2) of *CRR* that applies to this Part]

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

2.5 The expression 'consolidated situation' applies for the purposes of this Part as it does for the purposes of Parts Two and Three of *CRR*.

[Note: The term 'consolidated situation' is defined in Article 4(1)(47) of *CRR*]

Application of requirements on a sub-consolidated basis

2.6 An institution that is required to comply with Parts Two and Three of *CRR* on a sub-consolidated basis, shall comply with this Part on the same basis.

[Note: Rule 2.6 sets out an equivalent provision to Article 11(6) of *CRR* that applies to this Part]

3 ORGANISATIONAL STRUCTURE AND CONTROL MECHANISMS

3.1 A *CRR consolidation entity* and an institution shall set up a proper organisational structure and appropriate internal control mechanisms in order to ensure that the data required for consolidation for the purposes of this Part are duly processed and forwarded.

[Note: Rule 3.1 sets out an equivalent provision to the second sentence of Article 11(1) of *CRR* that applies to this Part]

3.2 A *CRR consolidation entity* and an institution shall ensure that a subsidiary not subject to this Part implements arrangements, processes and mechanisms to ensure proper consolidation for the purposes of this Part.

[Note: Rule 3.2 sets out an equivalent provision to the third sentence of Article 11(1) of *CRR* that applies to this Part]

4 TRANSITIONALS

4.1 By way of derogation, during the period from and including 1 January 2025 to and including 31 December 2025, an institution:

- (1) shall apply this Part for the purposes of calculating its own funds requirement for market risk under article 325ba on the basis that, throughout that period, every trading desk for which the institution has an *IMA permission* is classified as a green desk in accordance with article 325bg; and
- (2) shall not be required to demonstrate compliance with paragraph 6(a) of the *IMA standards* for the purposes of an application for an *IMA permission*.

5 CAPITAL REQUIREMENTS FOR MARKET RISK INTERNAL MODEL APPROACH (CRR)

SECTION 1 PERMISSION AND OWN FUND REQUIREMENTS

ARTICLE 325az PERMISSION TO USE INTERNAL MODELS

A1. An institution which applies for an *IMA permission* in respect of a trading desk must provide, as part of its application, documentation which explains, to the satisfaction of the *PRA*, how the institution meets the *IMA standards*.

1. An institution must:

- (a) calculate its own funds requirements for the portfolio of all positions assigned to a trading desk by using its internal models in accordance with Article 325ba, except as provided otherwise in this Part; and
- (b) ensure at all times that:

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

- (i) the trading desk (other than a notional trading desk) at all times meets the requirements of Trading Book (CRR) Article 104b(2);
 - (ii) its rationale for the inclusion of the trading desk in the scope of the internal model approach continues to apply; and
 - (iii) any *ineligible positions* assigned to the trading desk are treated separately for the purposes of calculating own funds requirements for market risk in respect of those *ineligible positions* as if they were assigned to a trading desk for which the institution has not been granted an *IMA permission*.
2. An institution shall immediately notify the *PRA* when a trading desk that is subject to the permission no longer meets at least one of the requirements set out in paragraph 1 of this Article. From the date of that notification, the institution:
 - (a) shall not use internal models in accordance with this Part in relation to any of the positions assigned to that trading desk; and
 - (b) shall apply Market Risk: Advanced Standardised Approach (CRR) Part to calculate the own funds requirements for market risk for all the positions assigned to that trading desk from the next earliest reporting date.

The institution may resume the use of internal models in accordance with this Part to calculate own funds requirements for market risk for the positions of that trading desk if it provides to the *PRA* a reasoned confirmation that the trading desk is compliant with the requirements in paragraph 1 of this Article.

3. By way of derogation from paragraph 2 of this Article, in exceptional circumstances, an institution may be granted permission by the *PRA* to continue using its internal models for the purpose of calculating the own funds requirements for the market risk of a trading desk that has ceased to meet either:
 - (a) the requirements set out in Article 325bf(3) for the preceding 12 months; or
 - (b) the requirements set out in in Article 325bg(1).

[Note: This is a permission under sections 144G and 192XC of *FSMA* to which Part 8 of the *Capital Requirements Regulations* applies]

4. An institution shall identify and measure deficiencies in risk capture in its internal models used in accordance with Article 325ba. An institution that identifies material deficiencies in risk capture shall calculate and fulfil an additional own funds requirement within its internal model approach which is adequate to mitigate such material risk deficiencies in addition to the own funds requirements calculated under Article 325ba.
5. An institution which is required to use Market Risk: Advanced Standardised Approach (CRR) Part in the calculation of own funds requirements for market risk for all positions assigned to a trading desk in accordance with paragraph 2 of this Article shall also to continue to fulfil the additional own funds requirement calculated for those positions in accordance with paragraph 4 of this Article.
6. For positions assigned to a trading desk for which an institution has not been granted an *IMA permission*, the institution shall calculate the own funds requirements for market risk in accordance with Market Risk: Advanced Standardised Approach (CRR) Part.
7. Where *ineligible positions* are assigned to a trading desk for which an institution has been granted an *IMA permission*, the institution shall calculate the own funds requirements for market risk for those *ineligible positions* in accordance with Market Risk: Advanced Standardised Approach (CRR) Part.

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8. For the purposes of the calculations in paragraphs 6 and 7 the institution shall include all those positions in the calculation of *CU* as defined in Article 325ba(3).
9. For the purposes of this Part, an institution shall treat a position in a CIU which is a closed-ended investment fund with a premium listing as an equity position in accordance with this Part. For the purposes of this paragraph, the terms 'closed-ended investment fund' and 'premium listing' shall have the meaning given to such terms in the *FCA Handbook*.

[Note: Paragraphs (1), (2), (3) and (6) of this rule correspond to Article 325az (2), (4), (5) and (6) of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 325azx MATERIAL CHANGES AND EXTENSIONS TO PERMISSION

1. An institution which has an *IMA permission* to use internal models may with the permission of the *PRA* make:
 - (a) a material change to the use of those internal models;
 - (b) a material extension of the use of those internal models; and
 - (c) a material change to the institution's choice of the subset of the modellable risk factors referred to in Article 325bc(2).

From the date specified in such permission, the institution shall calculate the own funds requirements using its internal models in accordance with and incorporating the permitted change or extension.

For the purpose of this paragraph, a change or extension to the use of internal models shall be considered material, if it fulfils any of the conditions set out in Part A of Annex 2.

When making an application for the permission referred to in this paragraph, an institution shall provide the *PRA* with the documentation specified in paragraph 1 of Part C of Annex 2.

[Note: This is a permission under sections 144G and 192XC of *FSMA* to which Part 8 of the *Capital Requirements Regulations* applies]

2. Where an institution has been granted permission by the *PRA* for a change or extension:
 - (a) in the case of delay of the implementation of that permitted change or extension, the institution shall promptly notify the *PRA* and present to the *PRA* a plan for a timely implementation of the permitted change or extension; or
 - (b) an institution which fails to implement that permitted change or extension on the date specified in that permission, and which has not notified the *PRA* in accordance with point (a) of this paragraph must not implement the change or extension and may do so only with the further permission of the *PRA*, as referred to in paragraph 1 of this Article.
3. An institution must assign changes and extensions to the category of the highest potential materiality for the purpose of determining whether one or more of the materiality thresholds in Part A of Annex 2 is met. An institution must not split an extension or change into several changes or extensions of lower materiality.
4. An institution shall notify the *PRA* of all changes and extensions to the use of the internal models other than those that are material for the purpose of paragraph 1 of this Article:
 - (a) in the case of a change or extension set out in Part B of Annex 2, at least two weeks before implementation; and
 - (b) in all other cases, at least annually.

When making a notification in accordance with point (a) of this paragraph, an institution shall provide the *PRA* with the documentation specified in paragraph 2 of Part C of Annex 2. An

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institution shall notify the *PRA* promptly if, having notified the *PRA* of a change or extension in accordance with point (a) of this paragraph, it decides not to implement the extension or change.

[Note: Paragraph (1) of this rule corresponds to Article 325az(7) of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 325ba OWN FUNDS REQUIREMENTS WHEN USING INTERNAL MODELS

1. An institution using an internal model shall calculate the own funds requirements for the portfolio of all positions assigned to the trading desks for which the institution has been granted an *IMA permission* as the higher of:
 - (a) the sum of the following values:
 - (i) the institution's previous day's expected shortfall risk measure, calculated in accordance with Article 325bb (ES_{t-1}); and
 - (ii) the institution's previous day's stress scenario risk measure, calculated in accordance with Article 325bk (SS_{t-1}); or
 - (b) the sum of the following values:
 - (i) the average of the institution's daily expected shortfall risk measure, calculated in accordance with Article 325bb for each of the preceding 60 *business days* (ES_{avg}), multiplied by the multiplication factor (m_c); and
 - (ii) the average of the institution's daily stress scenario risk measure, calculated in accordance with Article 325bk for each of the preceding 60 *business days* (SS_{avg}).
2. An institution which holds positions in traded debt and equity instruments that are included in the scope of the *internal default risk model* and assigned to the trading desks referred to in paragraph 1 shall fulfil an additional own funds requirement, expressed as the higher of the following values:
 - (a) the most recent own funds requirement for default risk, calculated in accordance with Section 3 of this Part; or
 - (b) the average of the amount referred to in point (a) over the preceding 12 weeks.
3. For the purpose of point (a) of paragraph 1 of this Article, and in accordance with the *back-testing requirements* and *P&L attribution requirements*, an institution shall calculate the total own funds requirements for all its trading book positions and all its *non-trading book positions* generating foreign exchange or commodity risks as the sum of the results of formulas (a) and (b) as follows:
 - (a) $\min(IMA_{g\&y} + \text{Capital surcharge} + C_U; SA_{all\ desks})$
 - (b) $\max(IMA_{g\&y} - SA_{g\&y}; 0)$

Where:

$IMA_{g\&y}$ = the own funds requirements calculated in accordance with this Article for the portfolio of all positions assigned to trading desks that meet the requirements set out in Article 325bf(3) for the preceding 12 months and have been classified as green or yellow desks among those in accordance with Article 325bg and for which the institution calculates the own funds requirements in accordance with this Part;

$SA_{g\&y}$ = the own funds requirements calculated in accordance with Market Risk: Advanced Standardised Approach (CRR) Part for the portfolio of all positions assigned to

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trading desks that meet the requirements set out in Article 325bf(3) for the preceding 12 months and have been classified as green zone or yellow zone trading desks among those in accordance with Article 325bg and for which the institution has permission to calculate the own funds requirements using internal models in accordance with this Part;

Capital surcharge= the capital surcharge calculated in accordance with paragraph 4;

C_U = the own funds requirements calculated in accordance with Market Risk: Advanced Standardised Approach (CRR) Part for the portfolio of positions not assigned to trading desks for which the institution has permission to calculate the own funds requirements using internal models in accordance with this Part, including the positions that are assigned to red zone or orange zone trading desks as specified in Paragraph 7 of Article 325bg or to trading desks that cease to meet the requirements set out in Article 325bf(3) for the preceding 12 months;

$SA_{(all\ desks)}$ = the own funds requirements of all trading book positions and all *non-trading book positions* generating foreign exchange or commodity risks in accordance with Market Risk: Advanced Standardised Approach (CRR) Part.

- An institution which calculates the own funds requirements in accordance with this Part for positions assigned to trading desks that have been classified as yellow zone desks in accordance with Article 325bg shall compute, in relation to those positions, a capital surcharge in accordance with the following formula:

$$Capital\ surcharge = k \times \max(SA_{g\&y} - IMA_{g\&y}; 0)$$

Where:

k = as specified in paragraph 5;

$IMA_{g\&y}$ = as specified in paragraph 3;

$SA_{g\&y}$ = as specified in paragraph 3.

- For the purpose of paragraph 4, the coefficient k shall be calculated on the basis of the following formula:

$$k = 0.5 \times \frac{\sum_{i \in y} SA_i}{\sum_{i \in g\&y} SA_i}$$

Where:

SA_i = the own funds requirements capital charge calculated in accordance Market Risk: Advanced Standardised Approach (CRR) Part for all the positions attributed to trading desk i ;

$i \in y$ = the indices of all trading desks that meet the requirements set out in Article 325bf(3) for the preceding 12 months and have been classified as yellow zone desks among those in accordance with Article 325bg and for which the institution has an *IMA permission* to calculate the own funds requirements using internal models in accordance with this Part;

$i \in g\&y$ = the indices of all trading desks that meet the requirements set out in Article 325bf(3) for the preceding 12 months and have been classified as green zone or yellow zone desks among those in accordance with Article 325bg and for which the institution has an *IMA permission* to calculate the own funds requirements using internal models in accordance with this Part.

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

6. An institution shall deem a trading desk that has been classified as a red zone or orange zone desk in accordance with Article 325bg as a trading desk that is not meeting the *P&L attribution requirements*. The institution must notify the *PRA* promptly on making this determination. As from the day on which the institution determines such classification, the institution shall not use internal models in accordance with this Part in relation to any of the positions assigned to that trading desk; and shall apply Market Risk: Advanced Standardised Approach (CRR) Part to calculate the own funds requirements for market risk for all the positions assigned to that trading desk. If the institution provides to the *PRA* a reasoned confirmation that the trading desk meets the conditions for classification as a green zone desk, the institution may resume the use of internal models in accordance with this Part to calculate own funds requirements for market risk for the positions of those trading desks.

[Note: Paragraphs (1) and (2) of this rule correspond to Article 325ba(1) and (2) of *CRR* as it applied immediately before revocation by the *Treasury*]

SECTION 2 GENERAL REQUIREMENTS

ARTICLE 325bb EXPECTED SHORTFALL RISK MEASURE

1. An institution shall calculate the expected shortfall risk measure referred to in point (a) of Article 325ba(1) for any given date '*t*' and for any given portfolio of trading book positions and *non-trading book positions* that are subject to foreign exchange or commodity risk as follows:

$$ES_t = \rho \cdot (UES_t) + (1 - \rho) \cdot \sum_i UES_t^i$$

Where:

ES_t = the expected shortfall risk measure;

UES_t = the unconstrained expected shortfall measure and calculated as follows:

$$UES_t = PES_t^{RS} \cdot \max\left(\frac{PES_t^{FC}}{PES_t^{RC}}, 1\right)$$

i = the index that denotes the five broad categories of risk factors listed in the first column of Table 2 of Article 325bd;

UES_t^i = the unconstrained expected shortfall measure for broad risk factor category *i* and calculated as follows:

$$UES_t^i = PES_t^{RS,i} \cdot \max\left(\frac{PES_t^{FC,i}}{PES_t^{RC,i}}, 1\right)$$

ρ = the supervisory correlation factor across broad categories of risk; $\rho = 50\%$;

PES_t^{RS} = the partial expected shortfall measure that shall be calculated for all the positions in the portfolio in accordance with Article 325bc(2);

PES_t^{RC} = the partial expected shortfall measure that shall be calculated for all the positions in the portfolio in accordance with Article 325bc(3);

PES_t^{FC} = the partial expected shortfall measure that shall be calculated for all the positions in the portfolio in accordance with Article 325bc(4);

$PES_t^{RS,i}$ = the partial expected shortfall measure for broad risk factor category *i* that shall be calculated for all the positions in the portfolio in accordance with Article 325bc(2);

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$PES_t^{RC,i}$ = the partial expected shortfall measure for broad risk factor category i that shall be calculated for all the positions in the portfolio in accordance with Article 325bc(3); and

$PES_t^{FC,i}$ = the partial expected shortfall measure for broad risk factor category i that shall be calculated for all the positions in the portfolio in accordance with of Article 325bc(4).

2. An institution shall only apply scenarios of future shocks to the specific set of modellable risk factors applicable to each partial expected shortfall measure, as set out in Article 325bc, when determining each partial expected shortfall measure for the calculation of the expected shortfall risk measure in accordance with paragraph 1.
3. Where at least one transaction of the portfolio has at least one modellable risk factor which has been mapped to the broad risk factor category i in accordance with Article 325bd, an institution shall calculate the unconstrained expected shortfall measure for the broad risk factor category i , and include it in the formula for the expected shortfall risk measure referred to in paragraph 1 of this Article.
4. By way of derogation from paragraph 1, if so specified in the *IMA permission*, an institution may reduce the frequency of the calculation of the ratio of undiversified unconstrained expected shortfall measures to diversified unconstrained expected shortfall measures:

$$\frac{\sum_i UES_t^i}{UES_t}$$

from daily to weekly, provided that both of the following conditions are met:

- (a) the institution is able to demonstrate that weekly calculation of the ratio of undiversified unconstrained expected shortfall measures to diversified unconstrained expected shortfall measures:

$$\frac{\sum_i UES_t^i}{UES_t}$$

does not underestimate the market risk of the relevant trading book positions relative to a daily calculation; and

- (b) the institution is able to increase the frequency of calculation of:

$$UES_t^i$$

$$PES_t^{RS,i}$$

$$PES_t^{RC,i}$$

and

$$PES_t^{FC,i}$$

from weekly to daily if required by the *PRA*.

[Note: This rule correspond to Article 325bb of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 325bc PARTIAL EXPECTED SHORTFALL CALCULATIONS

1. An institution shall calculate all the partial expected shortfall measures referred to in Article 325bb(1) as follows:
 - (a) daily calculations of the partial expected shortfall measures;

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- (b) at 97.5th percentile, one tailed confidence interval; and
- (c) for a given portfolio of trading book positions and *non-trading book positions* that are subject to foreign exchange or commodity risk, an institution shall calculate the partial expected shortfall measure at time 't' accordance with the following formula:

$$PES_t = \sqrt{(PES_t(T))^2 + \sum_{j \geq 2} \left(PES_t(T, j) \cdot \sqrt{\frac{(LH_j - LH_{j-1})}{10}} \right)^2}$$

where:

- PES_t = the partial expected shortfall measure at time t;
- J= the index that denotes the five liquidity horizons listed in the first column of Table 1;
- LH_j = the length of liquidity horizons j as expressed in days in Table 1;
- T= the base time horizon, where T = 10 days;
- $PES_t(T)$ = the partial expected shortfall measure that is determined by applying scenarios of future shocks with a 10-day time horizon only to the specific set of modellable risk factors of the positions in the portfolio set out in paragraphs 2, 3 and 4 for each partial expected shortfall measure referred to in Article 325bb(1); and
- $PES_t(T, j)$ = the partial expected shortfall measure that is determined by applying scenarios of future shocks with a 10-day time horizon only to the specific set of modellable risk factors of the positions in the portfolio set out in paragraphs 2, 3 and 4 for each partial expected shortfall measure referred to in Article 325bb(1) and of which the effective liquidity horizon, as determined in accordance with Article 325bd(2), is equal or longer than LH_j .

Table 1

Liquidity horizon j	Length of liquidity horizon j (in days)
1	10
2	20
3	40
4	60
5	120

- 2. For the purpose of calculating the partial expected shortfall measures:

$$PES_t^{RS}$$

and

$$PES_t^{RS,i}$$

referred to in Article 325bb(1), in addition to the requirements set out in paragraph 1 of this Article, an institution shall meet the following requirements:

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(a) in calculating:

$$PES_t^{RS}$$

an institution shall only apply scenarios of future shocks to a subset of the modellable risk factors of the positions in the portfolio as specified in the institution's *IMA permission* so that the following requirement is met with the sum taken over from the preceding 60 *business days*:

$$\frac{1}{60} \cdot \sum_{k=0}^{59} \frac{PES_{t-k}^{RC}}{PES_{t-k}^{FC}} \geq 75\%$$

Where an institution no longer meets the requirement referred to in the first paragraph of this paragraph (2)(a) the institution shall immediately notify the *PRA* thereof and, in order to meet that requirement, shall update the subset of the modellable risk factors within one month. If, after one month, that institution continues to fail to meet that requirement, the institution:

- (i) shall cease use of internal models in accordance with this Part in relation to the positions assigned to the number of trading desks which it is necessary to exclude from the calculation in paragraph (1) in order for the institution to meet the requirements; and
- (ii) shall apply Market Risk: Advanced Standardised Approach (CRR) Part to calculate the own funds requirements for market risk for all the positions assigned to those trading desks.

If the institution provides to the *PRA* a reasoned confirmation that the institution is compliant with the requirements referred to in the first paragraph of this paragraph (2)(a), it may resume the use of internal models in accordance with this Part to calculate own funds requirements for market risk for the positions assigned to those trading desks;

(b) in calculating:

$$PES_t^{RS,i}$$

an institution shall only apply scenarios of future shocks to the subset of the modellable risk factors of the positions in the portfolio chosen by the institution for the purposes of point (a) of this paragraph and which have been mapped to the broad risk factor category '7' in accordance with Article 325bd;

(c) the data inputs used to determine the scenarios of future shocks applied to the modellable risk factors referred to in points (a) and (b) shall be calibrated to historical data from a continuous 12-month period of financial stress that shall be identified by the institution in order to maximise the value of:

$$PES_t^{RS}$$

and for the purpose of identifying that stress period, an institution shall use an appropriate observation period starting at least from 1 January 2007. The institution shall assess the appropriateness of the stress period at each *quarterly reporting reference date* and shall adjust the stress period as necessary; and

(d) the data inputs of:

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$$PES_t^{RS,i}$$

shall be calibrated to the 12-month stress period that has been identified by the institution for the purposes of point (c).

3. For the purpose of calculating the partial expected shortfall measures:

$$PES_t^{RC}$$

and

$$PES_t^{RC,i}$$

referred to in Article 325bb(1), an institution shall, in addition to the requirements set out in paragraph 1 of this Article, meet the following requirements:

- (a) in calculating:

$$PES_t^{RC}$$

an institution shall only apply scenarios of future shocks to the subset of the modellable risk factors of the positions in the portfolio referred to in point (a) of paragraph 2;

- (b) in calculating:

$$PES_t^{RC,i}$$

an institution shall only apply scenarios of future shocks to the subset of the modellable risk factors of the positions in the portfolio referred to in point (b) of paragraph 2;

- (c) the data inputs used to determine the scenarios of future shocks applied to the modellable risk factors referred to in points (a) and (b) of this paragraph shall be calibrated to historical data referred to in point (c) of paragraph 4; that data shall be updated on at least a monthly basis.

4. For the purpose of calculating the partial expected shortfall measures:

$$PES_t^{FC}$$

and

$$PES_t^{FC,i}$$

referred to in Article 325bb(1), an institution shall, in addition to the requirements set out in paragraph 1 of this Article, meet the following requirements:

- (a) in calculating:

$$PES_t^{FC}$$

an institution shall apply scenarios of future shocks to all the modellable risk factors of the positions in the portfolio;

- (b) in calculating:

$$PES_t^{FC,i}$$

an institution shall apply scenarios of future shocks to all the modellable risk factors of the positions in the portfolio which have been mapped to the broad risk factor category i in accordance with Article 325bd; and

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- (c) the data inputs used to determine the scenarios of future shocks applied to the modellable risk factors referred to in points (a) and (b) shall be calibrated to historical data from the preceding 12-month period; provided that where there is a significant upsurge in the price volatility of a material number of modellable risks factors of an institution's portfolio which are not in the subset of the risk factors referred to in point (a) of paragraph 2, the institution must use historical data for a period shorter than the preceding 12-months, but of at least the preceding six-months.
5. In calculating a given partial expected shortfall measure as referred to in Article 325bb(1), an institution shall maintain the values of the modellable risks factors for which they have not been required to apply scenarios of future shocks for that partial expected shortfall measure under paragraphs 2, 3 and 4 of this Article.

[Note: This rule corresponds to Article 325bc of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 325bd LIQUIDITY HORIZONS

- An institution shall, in accordance with the methodologies set out in this Article and in Article 325bdx, map each risk factor of positions assigned to the trading desks for which it has been granted an *IMA permission*, to one of the broad categories of risk factors listed in Table 2 and to one of the broad sub-categories of risk factors listed in that Table.
- For the purposes of paragraph 1, the liquidity horizon of a risk factor shall be the liquidity horizon of the corresponding broad sub-category of risk factors to which it has been mapped.
- By way of derogation from paragraph 1 of this Article, for a given trading desk, an institution may decide to replace the liquidity horizon of a broad sub-category of risk factors listed in Table 2 of this Article with one of the longer liquidity horizons listed in Table 1 of Article 325bc. Where an institution takes such a decision, the longer liquidity horizon shall apply to all the modellable risk factors of the positions assigned to that trading desk that have been mapped to that broad sub-category of risk factors for the purpose of calculating the partial expected shortfall measures in accordance with point (c) of Article 325bc(1).

An institution shall notify the *PRA* of the trading desks and the broad sub-categories of risk factors to which it decides to apply the treatment referred to in this paragraph.

- For the purpose of calculating the partial expected shortfall measures in accordance with point (c) of Article 325bc(1), an institution shall calculate the effective liquidity horizon of a given modellable risk factor of a given trading book position and of a *non-trading book position* that is subject to foreign exchange or commodity risk as follows:

<i>EffectiveLH</i> =	<i>SubCatLH</i> if $Mat > LH5$
	$\min (SubCatLH, \min_j \{LH_j / LH_j \geq Mat\})$ if $LH1 \leq Mat \leq LH5$
	<i>LH1</i> if $Mat < LH1$

where:

EffectiveLH= the effective liquidity horizon;

Mat= the maturity of the trading book position;

SubCatLH= the length of liquidity horizon of the modellable risk factor determined in accordance with paragraph 1; and

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$\min_j \{LH_j / LH_j \geq Mat\}$ = the length of one of the liquidity horizons listed in Table 1 of Article 325bc which is the nearest liquidity horizon above the maturity of the trading book position.

5. [Note: Provision left blank]
6. An institution shall verify the appropriateness of the mapping referred to in paragraph 1 on at least a quarterly basis.
7. An institution shall map risk factors of positions referred to in paragraph 1 to the broad risk factor categories and broad risk factor subcategories of Table 2 in accordance with Article 325bdx.

Table 2

Broad categories of risk factors	Broad sub-categories of risk factors	Liquidity horizons	Length of the liquidity horizon (in days)
Interest rate	Most liquid currencies and domestic currency	1	10
	Other currencies (excluding most liquid currencies)	2	20
	Volatility	4	60
	Other types	4	60
Credit spread	Sovereign (Investment grade)	2	20
	Sovereign (High yield)	3	40
	Corporate (Investment grade)	3	40
	Corporate (High yield)	4	60
	Volatility	5	120
	Other types	5	120
Equity	Equity price (Large market capitalisation)	1	10
	Equity price (Small market capitalisation)	2	20
	Volatility (Large market capitalisation)	2	20

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	Volatility (Small market capitalisation)	4	60
	Other types	4	60
Foreign exchange	Most liquid currency pairs	1	10
	Other currency pairs (excluding most liquid currency pairs)	2	20
	Volatility	3	40
	Other types	3	40
Commodity	Energy price and carbon emissions price	2	20
	Precious metal price and non-ferrous metal price	2	20
	Other commodity prices (excluding energy price, carbon emissions price, precious metal price and non-ferrous metal price)	4	60
	Energy volatility and carbon emissions volatility	4	60
	Precious metal volatility and non-ferrous metal volatility	4	60
	Other commodity volatilities (excluding energy volatility, carbon emissions volatility, precious metal volatility and non-ferrous metal volatility)	5	120
	Other types	5	120

8. For the purpose of this Article:
- (a) the currencies that constitute the most liquid currencies for the purposes of the relevant subcategory in the interest rate broad risk factor sub-category of Table 2 shall be, in addition to the domestic currency mentioned in that Table, the following currencies:

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Australian dollar (AUD); Canadian dollar (CAD); Euro (EUR); Pound sterling (GBP); Japanese yen (JPY); Swedish kroner (SEK); United States dollar (USD); and

- (b) the currency pairs that constitute the most liquid currency pairs subcategory in the foreign exchange broad risk factor category of Table 2 shall be any currency pairs formed from any two of the following currencies: Australian dollar (AUD); Brazilian lire (BRL); Canadian dollar (CAD); Swiss franc (CHF); Chinese yuan (CNY); Euro (EUR); Pound sterling (GBP); Hong Kong Dollar (HKD); Indian rupee (INR); Japanese Yen (JPY); South Korean won (KRW); Mexican peso (MXN); Norwegian kroner (NOK); New Zealand dollar (NZD); Russian rouble (RUB); Swiss kroner (SEK); Singapore dollar (SGD); Turkish lira (TRY); United States dollar (USD); and South African rand (ZAR).
9. For the purpose of this Article, an equity shall be considered as an equity with large capitalisation where its market capitalisation is greater than GBP 1.60 billion. All other equities shall be considered as equities with small capitalisation.

[Note: Paragraphs (1) to (6) of this rule correspond to Article 325bd(1) to (6) of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 325bdx MAPPING OF RISK FACTORS

1. An institution shall map risk factors of positions referred to in paragraph 1 of Article 325bd to the broad risk factor categories and broad risk factor subcategories of Table 2 of Article 325bd in accordance with the following:
- (a) it shall map the risk factor to the most appropriate broad risk factor category, having regard to the nature of the risk captured by the risk factor and the data used as inputs for the risk factor in the *risk measurement model*;
- (b) it shall map the risk factor to the most appropriate broad risk factor subcategory under the broad risk factor category identified in accordance with point (a), having regard to the nature of the risk captured by the risk factor and the data used as inputs for the risk factor in the *risk measurement model*.
2. Where the nature of the risk factor does not correspond to any broad risk factor category, the institution shall map that risk factor to the broad risk factor category 'commodity' and to the broad risk factor subcategory 'other types' under the 'commodity' broad risk factor category.
3. Where the nature of the risk captured by the risk factor and the data used as inputs for that risk factor correspond to risk factors that could fall under more than one broad risk factor category or broad risk factor subcategory, the institution shall apply the following steps in sequence:
- (a) it shall first identify the broad risk factor categories and the corresponding broad risk factor subcategories that could be identified for that risk factor on the basis of its nature and the data used as inputs;
- (b) among the broad risk factor categories and the corresponding broad risk factor subcategories identified in accordance with point (a), it shall map the risk factor to the broad risk factor category and the corresponding broad risk factor subcategory that results in the longest liquidity horizon; and
- (c) where, based on the process referred to in point (b), more than one broad risk factor category and corresponding broad risk factor subcategory would result in the longest liquidity horizon, it may map the risk factor to any of those broad risk factor categories and their corresponding broad risk factor subcategories.

Mapping methodology for index instruments

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4. By way of derogation from paragraph 1, where a single risk factor is used to model a homogeneous index instrument, an institution may apply instead the following steps in sequence:
 - (a) it shall map the risk factor to the broad risk factor category corresponding to the risk embedded in the homogenous index. Where the risk factor is the price of a homogenous index made of bonds and indices composed by bonds only, it shall map that risk factor to the credit spread broad risk factor category;
 - (b) it shall apply paragraph 1 to 3 to each of the constituents of the index to obtain the liquidity horizons of each constituent;
 - (c) it shall compute the weighted average of the liquidity horizons obtained pursuant to point (b) and rounded to the nearest integer, by first multiplying the liquidity horizon of each individual constituent of the index by its weight in the index and then by summing the weighted liquidity horizons for all constituents of the index; and
 - (d) it shall map the risk factor to that subcategory of Table 2 of Article 325bd, among those belonging to the broad risk factor category identified in accordance with point (a), that has the shortest liquidity horizon which is greater or equal to the liquidity horizon identified in accordance with point (c).

For the purposes of this paragraph, 'homogeneous index' shall refer to an index that has one of the following compositions:

- (i) equities and indices composed by equities only;
- (ii) bonds and indices composed by bonds only;
- (iii) credit default swaps and indices composed of credit default swaps only; or
- (iv) commodities and indices composed of commodities only.

Mapping of inflation, mono-currency and cross-currency basis risk factors

5. An institution shall map the following risk factors as follows:
 - (a) inflation risk factors for a given currency shall be mapped to the interest rate broad risk category and to the broad risk factor subcategory of that currency;
 - (b) mono-currency basis risk and cross-currency basis risk factors shall be mapped to the interest rate broad risk factor category and to the broad factor subcategory of the currency denominating the basis;
 - (c) equity repo rates and dividend risk factors shall be mapped to the equity broad risk factor category; and
 - (d) for the purpose of determining the broad risk factor subcategory, equity repo rates and dividend risk factors for a given equity shall be treated as risk factors corresponding to the volatility of that equity.

ARTICLE 325be

ASSESSMENT OF THE MODELLABILITY OF RISK FACTORS

1. An institution shall assess the modellability of all the risk factors of the positions assigned to the trading desks for which it has been granted an *IMA permission*.
2. As part of the assessment referred to in paragraph 1 of this Article, an institution shall calculate the own funds requirements for market risk in accordance with Article 325bk for those risk factors that are not modellable.
3. With the exception of the cases referred to in paragraphs 8 to 10 of this Article, an institution shall consider a risk factor subject to the assessment referred to in paragraph 1 of this Article to

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be modellable where, over an observation period of 12 months ending at the preceding *quarterly reporting reference date* an institution has identified for that risk factor either of the following:

- (a) a minimum of 24 prices which are verifiable in accordance with paragraphs 5 and 6 of this Article with distinct observation dates, which are representative of the risk factor in accordance with paragraph 7 of this Article and for which there are no 90-day periods with less than four of those verifiable prices; and
 - (b) a minimum of 100 prices which are verifiable in accordance with paragraphs 5 and 6 of this Article, with distinct observation dates and which are representative of the risk factor in accordance with paragraph 7 of this Article.
4. An institution may replace the 12-month period referred to in paragraph 3 by a 12-month period that is ending no earlier than one month before the preceding *quarterly reporting reference date* where all of the following conditions are met:
- (a) the institution applies the shifted 12-month period consistently across all risk factors of the same type as that risk factor;
 - (b) the institution applies the shifted 12-month period consistently across time; and
 - (c) the institution documents the use of a 12-month period in accordance with this paragraph.

Verifiable prices

5. For the purposes of this Article:
- (a) an institution shall consider a price to be verifiable where any of the following conditions and the requirements of paragraph 6 of this Article are met:
 - (i) the price is obtained from an actual transaction to which the institution was one of the parties and which was entered into at arm's length;
 - (ii) the price is obtained from an actual transaction which was entered into by third parties at arm's length; or
 - (iii) the institution has identified, on a given observation date, an actual bona fide competitive bid and offer quotations provided at arm's length by the institution itself or by third parties, at which, conforming to trade custom, the institution or the third parties have committed to execute a transaction.
 - (b) an institution shall not consider a price to be verifiable where any of the following conditions are met:
 - (i) the price is obtained from a transaction or quotation between two entities of the same group;
 - (ii) the price is obtained from a transaction or quotation of a negligible volume as compared to usual volume of transactions or quotes, reflective of current market conditions; or
 - (iii) the price is obtained from a quotation that is substantially further off mid-market than the institution identified on a given observation date actual bona fide competitive bid and offer quotations, with a bid–offer spread deviating substantially from bid–offer spreads reflective of current market conditions;
 - (c) transactions shall not be conducted and quotations shall not be committed with the sole purpose of identifying a sufficient number of verifiable prices to meet the criteria specified in points (a) and (b) of paragraph 3 of this Article; or

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- (d) the observation date of a verifiable price shall correspond to the day of execution for transactions and to the day on which the quotation was committed for quotations. The observation date of verifiable prices shall be recorded based on a consistent single time zone across all data sources.
6. An institution shall use a transaction or a quotation for the purpose of points (ii) and (iii) of paragraph 5(a) only if all the following conditions are met:
- (a) the transaction or quotation has been processed through, or collected by, a *third-party vendor*;
 - (b) the *third-party vendor* or the institution has agreed to provide evidence of the transaction or quotation and evidence of the verifiability of its price to the *PRA* upon request;
 - (c) the *third-party vendor* has provided to the institution the observation date and a minimum set of information about the transaction or quotation on the basis of which the institution is able to map the verifiable price to its risk factors for which it is representative in accordance with paragraph 7 of this Article;
 - (d) the institution has verified that the *third-party vendor* is subject, at least annually, to an independent audit by a third-party undertaking, within the meaning of Article 325bi(1)(h), regarding the validity of its price information, governance and processes, and has access to audit results and reports, in case these are requested by the *PRA*.

For the purpose of point (d), the independent audit by a third-party undertaking shall include, at a minimum, all of the following elements:

- (i) that the *third-party vendor* possesses the information necessary to verify that a price is verifiable in accordance with paragraph 5 of this Article, as well as the information necessary to map the verifiable prices to the risk factors for which they are representative in accordance with paragraph 7 of this Article;
 - (ii) that the *third-party vendor* is able to demonstrate the integrity of the information referred to in paragraph (a);
 - (iii) that the *third-party vendor* has in place internal processes and a sufficient number of staff with a level of skills appropriate for the management of the information referred to in paragraph (a); and
 - (iv) that, where a *third-party vendor* does not provide the institution with the information to verify that a price is verifiable in accordance with paragraph 5 of this Article, the *third-party vendor* is contractually obliged to verify itself that the price is verifiable in accordance with this Article; and
- (e) where a *third-party vendor* does not provide the institution with the information to verify that a price is verifiable in accordance with paragraph 5 of this Article, the institution must ensure that the *third-party vendor* is contractually obliged to verify itself that a price is verifiable in accordance with paragraph 5 of this Article.

Representativeness of verifiable prices for risk factors

7. In relation to the representativeness of risk factors, an institution:
- (a) shall consider a verifiable price to be representative of a risk factor at its observation date only where both the following conditions are met:
 - (i) there is a close relationship between the risk factor and the verifiable price; and
 - (ii) the institution has a specific conceptually sound methodology to extract the value of the risk factor from the verifiable price. Any input data or risk factor used in that methodology other than that verifiable price shall be based on objective data;

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- (b) may count a verifiable price for the purpose of this Article for more than one risk factor for which it is representative in accordance with paragraph 1. An institution shall document and validate all instances where a verifiable price is counted for more than one risk factor, and shall notify the *PRA* of the justification for this; and
- (c) where it uses a systematic credit or equity risk factor to capture market-wide movements for given attributes of a pool of *issuers*, such as the country, region or sector of those *issuers*, verifiable prices of market indices or instruments of individual *issuers* shall be considered representative for that systematic risk factor only where they share the same attributes as that systematic risk factor.

Criteria for the modellability of risk factors belonging to curves, surfaces and cubes

8. In relation to the modellability of risk factors belonging to curves, surfaces and cubes, an institution shall comply with the following:
- (a) where an institution defines one or more points of a curve, a surface or a cube as the risk factors in its *risk measurement model*, the institution shall assess the modellability of those risk factors by applying the following steps in sequence:
 - (i) for each curve, surface or cube, it shall determine relevant buckets of risk factors in accordance with paragraph 9 of this Article;
 - (ii) it shall determine the modellability of the buckets determined pursuant to point (i) in accordance with paragraph 8(b) of this Article; and
 - (iii) it shall consider as modellable risk factor any risk factor that belongs to a bucket that has been considered modellable pursuant to point (a)(ii) of paragraph 8 of this Article;
 - (b) an institution shall consider a bucket modellable where, over an observation period of 12 months ending at the preceding *quarterly reporting reference date*, the institution has identified, for that bucket, either of the following:
 - (i) a minimum of 24 prices which are verifiable in accordance with paragraphs 5 and 6 of this Article, with distinct observation dates, which are allocated to that bucket and for which there shall be no 90-day period with less than four of those verifiable prices; or
 - (ii) a minimum of 100 prices which are verifiable in accordance with paragraphs 5 and 6 of this Article, with distinct observation dates and which are allocated to that bucket.
 - (c) an institution may replace the 12-month period referred to in this paragraph by a 12-month period that is ending no earlier than one month before the preceding *quarterly reporting reference date* where all of the following conditions are met:
 - (i) the institution applies the shifted 12-month period consistently across all the buckets of a curve, a surface or a cube;
 - (ii) the institution applies the shifted 12-month period consistently across time; and
 - (iii) the institution documents the use of a 12-month period in accordance with this paragraph.

An institution shall allocate a verifiable price to a bucket where it is representative in accordance with paragraph 7 of this Article for a risk factor that belongs to that bucket. For this purpose, the institution may consider as a risk factor any point of the curve, surface or cube belonging to the bucket, regardless of whether such point is a risk factor included in the *risk measurement model*.

Bucketing approaches for risk factors belonging to curves, surfaces or cubes

9. In relation to each given curve, surface or cube to which a risk factor belongs:

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- (a) an institution shall determine the buckets of that curve, surface or cube using the standard pre-defined buckets in point (b), unless it meets the requirements for the derogation in paragraph (c), in which case it may either define those buckets itself or define them using a combination of its own definitions and the standard pre-defined buckets in point (b), provided that only one method may be used within each dimension;
- (b) The standard, pre-defined buckets are:
 - (i) the nine buckets defined in row i. of Table 1 below for risk factors with one maturity dimension t , expressed in years, which have been assigned to the following broad risk factor categories:
 - (1) Interest rate, except those risk factors assigned to the broad risk factor subcategory Volatility;
 - (2) Foreign Exchange, except those risk factors assigned to the broad risk factor subcategory Volatility; or
 - (3) Commodity, except those risk factors assigned to the broad risk factor subcategories Energy volatility and carbon emissions volatility, Precious metal volatility and nonferrous metal volatility and Other commodity volatilities;
 - (ii) the six buckets defined in row ii. of Table 1 for each maturity dimension ' t ' of risk factors with more than one maturity dimension, expressed in years, which have been assigned to the following broad risk factor categories:
 - (1) Interest rate, except those risk factors assigned to the broad risk factor subcategory Volatility;
 - (2) Foreign Exchange, except those risk factors assigned to the broad risk factor subcategory Volatility; or
 - (3) Commodity, except those risk factors assigned to the broad risk factor subcategories Energy volatility and carbon emissions volatility, Precious metal volatility and nonferrous metal volatility and Other commodity volatilities;
 - (iii) the five buckets defined in row iii. of Table 1 for each maturity dimension ' t ' for risk factors with one or several maturity dimensions, expressed in years, which have been assigned to the following broad risk factor categories:
 - (1) Credit spread, except those risk factors assigned to the broad risk factor subcategory Volatility; or
 - (2) Equity, except those risk factors assigned to the broad risk factor subcategories Volatility (Large capitalisation) and Volatility (Small capitalisation);
 - (iv) the five buckets defined in row iv. of Table 1 for any risk factors with one or several moneyness dimensions, as expressed using the delta (' δ ') convention. For option markets where alternative definitions of moneyness are standard, an institution shall convert the buckets defined in row iv. of Table 1 to the market-standard convention using formulae which are consistent with their own documented and independently reviewed pricing models;
 - (v) the five buckets defined in row iii. and the five buckets defined in row iv. of Table 1 for risk factors assigned to the following broad risk factor categories:
 - (1) Foreign Exchange, exclusively those risk factors assigned to the broad risk factor subcategory Volatility;
 - (2) Credit spread, exclusively those risk factors assigned to the broad risk factor subcategory Volatility;

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- (3) Equity, exclusively those risk factors assigned to the broad risk factor subcategories Volatility (Large capitalisation) and Volatility (Small capitalisation); or
- (4) Commodity, exclusively those risk factors assigned to the broad risk factor subcategories Energy volatility and carbon emissions volatility, Precious metal volatility and non-ferrous metal volatility and Other commodity volatilities;
- (vi) the six buckets defined in row ii., the five buckets defined in row iii. and the five buckets defined in row iv. of Table 1 for risk factors assigned to the broad risk factor category Interest rate and to the broad risk factor subcategory Volatility with a maturity, expiry and moneyness dimension;

Table 1

Bucket No.	1	2	3	4	5	6	7	8	9
i.	$0 \leq t < 0.75$	$0.75 \leq t < 1.5$	$1.5 \leq t < 4$	$4 \leq t < 7$	$7 \leq t < 12$	$12 \leq t < 18$	$18 \leq t < 25$	$25 \leq t < 35$	$35 \leq t$
ii.	$0 \leq t < 0.75$	$0.75 \leq t < 4$	$4 \leq t < 10$	$10 \leq t < 18$	$18 \leq t < 30$	$30 \leq t$			
iii.	$0 \leq t < 1.5$	$1.5 \leq t < 3.5$	$3.5 \leq t < 7.5$	$7.5 \leq t < 15$	$15 \leq t$				
iv.	$0 \leq \delta < 0.05$	$0.05 \leq \delta < 0.3$	$0.3 \leq \delta < 0.7$	$0.7 \leq \delta < 0.95$	$0.95 \leq \delta \leq 1$				

A given standard bucket may be subdivided in smaller buckets.

- (c) By way of derogation from paragraph (a) only where all the following conditions are met, an institution may either define the buckets of a curve, surface or cube themselves or define them using a combination of their own definitions and the standard pre-defined buckets in point (b), provided that only one method may be used within each dimension:
 - (i) the buckets cover the whole curve, surface or cube;
 - (ii) the buckets are non-overlapping; and
 - (iii) each bucket includes exactly one risk factor that is part of the calculation of the theoretical changes in the trading desk portfolios' values of the institution for the purposes of assessing the compliance with the profit and loss attribution requirements in accordance with Article 325bg;
- (d) For the assessment of the modellability of risk factors of the broad risk factor category Credit spread belonging to a certain maturity bucket, an institution may reallocate the verifiable prices of a bucket to the adjacent bucket related to shorter maturities only where all the following conditions are met:
 - (i) the institution does not have exposure to any risk factor belonging to the bucket corresponding to the longer maturities and hence does not use any of these risk factors within its *risk measurement model*;

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- (ii) any verifiable price is only counted in a single maturity bucket; and
- (iii) any verifiable price is only reallocated once.

Criteria for the modellability of risk factors belonging to parametric curves, surfaces and cubes

10. In relation to the modellability of risk factors belonging to parametric curves, surfaces and cubes:
- (a) where an institution uses one or more parametric functions to represent a curve, a surface or a cube and defines the function parameters as the risk factors in its *risk measurement model*, the institution shall assess the modellability of those function parameters used as risk factors by applying for each parametric function the following steps in sequence:
 - (i) it shall identify the set of points of the curve, surface or cube that were used to calibrate the parametric function;
 - (ii) it shall apply the bucketing approach set out in paragraph 9 of this Article as if the risk factors in the *risk measurement model* were the points identified pursuant to point (i);
 - (iii) it shall assess, in accordance with paragraph 8 of this Article, the modellability of the buckets resulting from the application of the bucketing approach referred to in paragraph 9 of this Article, as if the risk factors in the *risk measurement model* were the points identified in point (i);
 - (b) for the purpose of assessing the modellability of a parameter of the parametric function, the institution shall apply the following steps in sequence:
 - (i) it shall identify the set of points of the curve, surface or cube that were used to calibrate that function parameter;
 - (ii) it shall assess that function parameter as modellable, where the points identified pursuant to point (i) belong only to buckets assessed as modellable pursuant to point (iii) of paragraph (a); and
 - (c) it shall assess that function parameter as non-modellable, where a point identified pursuant to point (i) belongs to a bucket assessed as non-modellable pursuant to point (iii) of paragraph (a).

Documentation

11. An institution shall clearly document in its internal policies:
- (a) the set and definitions of risk factors in its *risk measurement model* subject to the modellability assessment;
 - (b) the sources of verifiable price information used to assess the modellability of risk factors;
 - (c) the criteria for a price to be considered verifiable in accordance with paragraphs 5 and 6 of this Article, including an outline of how the institution assesses whether the volume of a transaction or committed quote is non-negligible in accordance with point (b)(ii) of paragraph 5 of this Article and whether the bid–offer spread of a quote is reasonable in accordance with point (b)(iii) of paragraph 5 and paragraph 6 of this Article;
 - (d) the mapping process and the criteria used to determine the representativeness of verifiable prices to risk factors in accordance with paragraph 7 of this Article, including an outline of the methodology specified for the extraction of the value of the risk factor and any additional input the methodology potentially requires;
 - (e) the modellability assessment for parametric curves, surfaces or cubes in accordance with paragraph 10;

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- (f) the use of the bucketing approaches in accordance with paragraph 9 of this Article, also specifying whether and how the institution reallocates the verifiable prices of a bucket to the adjacent bucket related to shorter maturities; and
 - (g) the use of the 12-month period in accordance with paragraphs 3 and 8 of this Article.
12. For each risk factor, an institution shall keep a record of at least one year of the results of their modellability assessment, including the documentation referred to in points (a) to (g). For risk factors for which one year of results is not yet available, an institution shall keep the maximum available track record of results.

[Note: Paragraphs (1) and (2) of this rule correspond to Article 325be(1) and (2) of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 325bf REGULATORY BACK-TESTING REQUIREMENTS AND MULTIPLICATION FACTORS

1. For the purposes of this Article, an 'overshooting' means a one-day change in the value of a portfolio composed of all the positions assigned to the trading desk that exceeds the related value-at-risk number calculated on the basis of the institution's internal model in accordance with the following requirements:
 - (a) the calculation of the value at risk shall be subject to a one-day holding period;
 - (b) scenarios of future shocks shall apply to the risk factors of the trading desk's positions referred to in Article 325bg(3), including risk factors that are considered non-modellable in accordance with Article 325be;
 - (c) data inputs used to determine the scenarios of future shocks applied to the risk factors shall be calibrated to historical data referred to in point (c) of Article 325bc(4); and
 - (d) unless stated otherwise in this Article, the institution's internal model shall be based on the same modelling assumptions as those used for the calculation of the expected shortfall risk measure referred to in point (a) of Article 325ba(1).
2. An institution shall count daily overshootings on the basis of back-testing of the hypothetical and actual changes in the value of the portfolio composed of all the positions assigned to the trading desk.
3. An institution's trading desk shall be deemed to meet the *back-testing requirements* where the number of overshootings for that trading desk that occurred over the most recent 250 *business days* does not exceed any of the following:
 - (a) 12 overshootings for the value-at-risk number, calculated at a 99th percentile one tailed-confidence interval on the basis of back-testing of the hypothetical changes in the value of the portfolio;
 - (b) 12 overshootings for the value-at-risk number, calculated at a 99th percentile one tailed-confidence interval on the basis of back-testing of the actual changes in the value of the portfolio;
 - (c) 30 overshootings for the value-at-risk number, calculated at a 97.5th percentile one tailed-confidence interval on the basis of back-testing of the hypothetical changes in the value of the portfolio; or
 - (d) 30 overshootings for the value-at-risk number, calculated at a 97.5th percentile one tailed-confidence interval on the basis of back-testing of the actual changes in the value of the portfolio.
4. An institution shall count daily overshootings in accordance with the following:

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- (a) it shall base the back-testing of hypothetical changes in the value of the portfolio on a comparison between the end-of-day value of the portfolio and, assuming unchanged positions, the value of the portfolio at the end of the subsequent day;
 - (b) it shall base the back-testing of actual changes in the value of the portfolio on a comparison between the end-of-day value of the portfolio and its actual value at the end of the subsequent day, excluding fees and commissions; and
 - (c) it shall count an overshooting for each *business day* for which the institution is not able to assess the value of the portfolio or is not able to calculate the value-at-risk number referred to in paragraph 3.
5. An institution shall calculate, in accordance with paragraphs 6 and 7 of this Article, the multiplication factor (m_c) referred to in Article 325ba for the portfolio of all the positions assigned to the trading desks for which it has been granted an *IMA permission*.
6. An institution shall calculate the multiplication factor (m_c) as the sum of the value of 1.5 and an add-on between 0 and 0.5 in accordance with Table 3. For the portfolio referred to in paragraph 5, the institution shall calculate that add-on on the basis of the number of overshootings that occurred over the most recent 250 *business days* as evidenced by the institution's back-testing of the value-at-risk number calculated in accordance with point (a) of this paragraph. The institution's calculation of the add-on shall be subject to the following requirements:
- (a) an overshooting shall be a one-day change in the portfolio's value that exceeds the related value-at-risk number calculated by the institution's internal model in accordance with the following:
 - (i) a one-day holding period;
 - (ii) a 99th percentile, one tailed confidence interval;
 - (iii) scenarios of future shocks shall apply to the risk factors of the trading desks' positions referred to in Article 325bg(3) and which are considered modellable in accordance with Article 325be;
 - (iv) the data inputs used to determine the scenarios of future shocks applied to the modellable risk factors shall be calibrated to historical data referred to in point (c) of Article 325bc(4);
 - (v) unless stated otherwise in this Article, the institution's internal model shall be based on the same modelling assumptions as those used for the calculation of the expected shortfall risk measure referred to in point (a) of Article 325ba(1);
 - (b) the number of overshootings shall be equal to the greater of the number of overshootings under hypothetical and the actual changes in the value of the portfolio.

Table 3

Number of overshootings	Add-on
Fewer than 5	0.00
5	0.20
6	0.26
7	0.33

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8	0.38
9	0.42
More than 9	0.50

7. An institution shall promptly notify the *PRA* of overshootings that result from their back-testing programme and provide an explanation for those overshootings, and in any case shall notify the *PRA* thereof no later than within five *business days* after the occurrence of an overshooting.
8. By way of derogation from paragraph 6 of this Article, an institution may, with the permission of the *PRA*, exclude an overshooting from a count if, on applying for such permission, it can demonstrate to the satisfaction of the *PRA* that:
 - (a) the overshooting is not attributable to a deficiency in the internal risk model; and
 - (b) it meets either of the following requirements:
 - (i) if the overshooting is attributable to a non-modellable risk factor, the one-day change in the portfolio's value does not exceed the related value-at-risk number referred to in point (a) of paragraph 6 but calculated by applying the scenarios of future shocks to all risk factors of the trading desk's positions referred to in Article 325bg(3), including non-modellable risk factors; or
 - (ii) if the overshooting is attributable to deficiencies in risk capture and where the institution fulfils an additional own funds requirement in accordance with Article 325az(4), the additional own funds requirement calculated in accordance with Article 325az(4) is higher than the positive difference between the change in the value of the institution's portfolio and the related value-at-risk number.

[Note: This is a permission created under sections 144G and 192XC of *FSMA* to which Part 8 of the *Capital Requirements Regulations* applies]

9. For the purpose of the trading desk back-testing referred to in paragraph 3, an institution shall:
 - (a) compute actual changes in the trading desk portfolio's value using the same pricing methods, model parametrisations, market data and any other technique as those used in the end-of-day valuation process, taking into account the independent price verification process in accordance with paragraph 8 of Trading Book (CRR) Article 105;
 - (b) reflect the passage of time in the actual changes in the trading desk portfolio's value;
 - (c) compute the value of an adjustment on the basis of only the positions assigned to that trading desk and shall reflect changes in its value only on the reference date for the calculation of the adjustment;
 - (d) include in the actual changes in the trading desk portfolio's value only the adjustments that have been considered in the end-of-day valuation process referred to in sub-paragraph (1) that are market risk related, with the exception of all of the following:
 - (i) credit valuation adjustments reflecting the current market value of the credit risk of counterparties to the institution;
 - (ii) adjustments attributed to the institution's own credit risk that have been excluded from own funds in accordance with point (b) or (c) of Article 33(1) of *CRR*;
 - (iii) additional value adjustments deducted from Common Equity Tier 1 capital in accordance with Article 34 of *CRR*;

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provided that, an institution may also exclude from the calculation of the actual changes an adjustment that is computed, in the end-of-day valuation process, across sets of positions assigned to more than one trading desk on a net basis, where all of the following conditions are met:

- (1) that adjustment is computed across sets of positions assigned to more than one trading desk on a net basis due to its nature;
- (2) the internal risk management of that adjustment is consistent with the level at which it is calculated;
- (3) the institution documents all of the following:
 - (a) the sets of positions on which the adjustment is computed;
 - (b) the reasoning underpinning the computation of the adjustment on the sets of positions referred to in point (1); and
 - (c) the justification for not computing the adjustment on the basis of positions assigned to that trading desk only.

Technical elements to be included in the actual changes in the portfolio's value for the back-testing

10. For the purpose of the back-testing referred to in paragraph 6 of this Article, an institution shall:
 - (a) compute actual changes in the portfolio's value using the same pricing methods, model parametrisations, market data and any other technique as those used in the end-of-day valuation process, taking into account the independent price verification process in accordance with paragraph 8 of Trading Book (CRR) Article 105;
 - (b) reflect the passage of time in the actual changes in the portfolio's value;
 - (c) include in the actual changes in the portfolio's value the adjustments that have been considered in the end-of-day valuation process referred to in sub-paragraph (1) that are market risk related, with the exception of all of the following:
 - (i) credit valuation adjustments reflecting the current market value of the credit risk of counterparties to the institution;
 - (ii) adjustments attributed to the institution's own credit risk that have been excluded from own funds in accordance with point (b) or (c) of Article 33(1) of *CRR*; and
 - (iii) additional value adjustments deducted from Common Equity Tier 1 capital in accordance with Article 34 of *CRR*;
 - (d) compute the value of an adjustment in either of the following ways:
 - (i) on the basis of only those positions that are assigned to trading desks for which an institution calculate the own funds requirements for market risk in accordance with this Part; or
 - (ii) on the basis of all positions subject to own funds requirements for market risk; and
 - (e) reflect changes in the value of that adjustment only on the reference date for the calculation of the adjustment.

Technical elements to be included in the hypothetical changes of a trading desk portfolio's value for the back-testing

11. For the purpose of the trading desk back-testing referred to in paragraph 3 of this Article, an institution shall:

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- (a) compute hypothetical changes in the trading desk portfolio's value using the same pricing methods, model parametrisations, market data and any other technique as those used in the end-of-day valuation process, without considering any fees and commissions;
 - (b) reflect the passage of time effect in the hypothetical changes in the trading desk portfolio's value consistently with the treatment they apply in relation to such effect in the calculation of the expected shortfall risk measure referred to in Article 325bb and in the calculation of the stress scenario risk measure referred to in Article 325bk; and
 - (c) include in the hypothetical changes in the trading desk portfolio's value only adjustments that have been considered in the end-of-day valuation process referred to in the first paragraph that are market risk related and are calculated on a daily basis, with the exception of all of the following:
 - (i) credit valuation adjustments reflecting the current market value of the credit risk of counterparties to the institution;
 - (ii) adjustments attributed to the institution's own credit risk that have been excluded from own funds in accordance with point (b) or (c) of Article 33(1) of *CRR*;
 - (iii) additional value adjustments deducted from Common Equity Tier 1 capital pursuant to Article 34 of *CRR*; and
 - (iv) any other adjustment specified for the purposes of this paragraph in the institution's *IMA permission*.
12. By way of derogation from point (a) of paragraph 11 of this Article, an institution may also exclude from the calculation of the hypothetical changes an adjustment that is computed, in the end-of-day valuation process, across sets of positions assigned to more than one trading desk on a net basis, where all of the following conditions are met:
- (a) that adjustment is computed across sets of positions assigned to more than one trading desk on a net basis due to its nature;
 - (b) the internal risk management of that adjustment is consistent with the level at which it is calculated;
 - (c) the institution documents all of the following:
 - (i) the sets of positions on which the adjustment is computed;
 - (ii) the reasoning underpinning the computation of the adjustment on the sets of positions referred to in point (i); and
 - (iii) the justification for not computing the adjustment on the basis of positions assigned to that trading desk only.
13. An institution shall compute the value of an adjustment on the basis of the positions assigned to that trading desk only and shall reflect changes based on a comparison between the end-of-day value of that adjustment and, assuming unchanged positions in the trading desk's portfolio, the value of that adjustment at the end of the subsequent day.

Technical elements to be included in the hypothetical changes in the portfolio's value for the back-testing

14. For the purpose of the back-testing referred to in paragraph 6 of this Article, an institution shall:
- (a) compute hypothetical changes in the portfolio's value using the same pricing methods, model parametrisations, market data and any other technique as those used in the end-of-day valuation process, without considering any fees and commissions;

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- (b) reflect the passage of time effect in the hypothetical changes in the portfolio's value consistently with the treatment the institution applies for such effect in the calculation of the expected shortfall risk measure as referred to in Article 325bb and in the calculation of the stress scenario risk measure referred to in Article 325bk;
- (c) include in the hypothetical changes in the portfolio's value only the adjustments that have been considered in the end-of-day valuation process referred to in the first paragraph that are market risk related, are calculated on a daily basis, with the exception of all of the following:
 - (i) credit valuation adjustments reflecting the current market value of the credit risk of counterparties to the institution;
 - (ii) adjustments attributed to the institution's own credit risk that have been excluded from own funds in accordance with point (b) or (c) of Article 33(1) of *CRR*;
 - (iii) additional valuation adjustments deducted from Common Equity Tier 1 capital as per Article 34 of *CRR*; and
 - (iv) other adjustments which are specified for the purposes of this paragraph in the institution's *IMA permission*;
- (d) compute the value of an adjustment in either of the following ways:
 - (i) on the basis of only those positions that are assigned to trading desks for which an institution calculates the own funds requirements for market risk using internal models in accordance with this Part; or
 - (ii) on the basis of all positions subject to own funds requirements for market risk; in this case, an institution shall include the changes in the value of that adjustment in the calculation of the actual changes in the portfolio's value.

Documentation requirements

15. An institution shall have policies and procedures in place defining how they calculate the actual and hypothetical changes in accordance with paragraphs 9 to 12 of this Article, which shall include at least the following elements:
- (a) a description of how the actual changes in the relevant portfolio's value are calculated, an outline of the differences between the changes in the end-of-day portfolio values produced by the end-of-day valuation process and the actual changes in the relevant portfolio's value;
 - (b) the definitions of fees and commissions and the methods used to apply the exclusion referred to in paragraph 4(b);
 - (c) a list of all adjustments specifying for each adjustment all of the following:
 - (i) definitions;
 - (ii) calculation methodology and process;
 - (iii) frequency of calculation and reasoning in case of a less than daily calculation frequency;
 - (iv) whether the adjustment is sensitive to market risk;
 - (v) the sets of positions on which the adjustment is calculated and the reasoning for performing the computation on such sets;
 - (vi) whether and how the risk stemming from changes in the adjustment is actively hedged and which trading desk or desks are responsible for this;

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- (vii) whether and how each adjustment is taken into account in the actual changes in the relevant portfolio value for the purpose of the back-testing referred to in paragraph 6 and the back-testing referred to in paragraph 3; and
- (viii) whether and how each adjustment is taken into account in the hypothetical changes in the relevant portfolio value for the purpose of this Article 325bf and Article 325bg, also outlining how the change in the adjustment is calculated if one assumes unchanged positions in the portfolio.

[Note: Paragraphs (1) to (8) of this rule correspond to Article 325bf(1) to (8) of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 325bg PROFIT AND LOSS ATTRIBUTION REQUIREMENT

1. An institution must ensure that a trading desk meets the *P&L attribution requirements* in compliance with the requirements set out in this Article.
2. An institution shall in compliance with the *P&L attribution requirements* ensure that the theoretical changes in the value of a trading desk's portfolio, based on the institution's *risk measurement model*, are sufficiently close to the hypothetical changes in the value of the trading desk's portfolio, based on the institution's pricing model.
3. For each position of a given trading desk, an institution's compliance with the *P&L attribution requirements* shall lead to the identification of a precise list of risk factors that are deemed appropriate for verifying the institution's compliance with the *back-testing requirements* set out in Article 325bf.
4. With regard to ensuring that the theoretical changes in a trading desk portfolio's value are sufficiently close to the hypothetical changes in the trading desk portfolio's value for the purposes of paragraph 2 of this Article, an institution shall calculate the *Spearman correlation coefficient* as laid down in paragraph 5 of this Article, and the *Kolmogorov-Smirnov test metric* as laid down in paragraph 6 of this Article.

For the purposes of this Article, an institution may align the snapshot time for which it calculates the theoretical changes in the trading desk portfolio's value with the snapshot time for which it calculates the hypothetical changes in the trading desk portfolio's value.

5. In order to calculate the *Spearman correlation coefficient* for a trading desk referred to in paragraph 4 of this Article, an institution shall perform the following steps in sequence:
 - (a) determine the time series of observations of the hypothetical and theoretical changes in the trading desk portfolio's value for the most recent 250 *business days*;
 - (b) from the time series of the hypothetical and theoretical changes referred to in point (a), produce the corresponding time series of ranks in the manner set out below, treating the time series of the hypothetical and theoretical changes as the originating time series;
 - (c) compute the *Spearman correlation coefficient* in accordance with the following formula:

$$r_s = \frac{cov(R_{HPL}, R_{RTPL})}{\sigma_{R_{HPL}} \times \sigma_{R_{RTPL}}}$$

Where:

R_{HPL} = the time series of ranks produced from the time series of hypothetical changes as per point (b);

R_{RTPL} = the time series of ranks produced from the time series of theoretical changes as per point (b);

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- $\sigma_{R_{HPL}}$ = the standard deviation of the time series of ranks R_{HPL} calculated in accordance with paragraph 9(a);
- $\sigma_{R_{RTPL}}$ = the standard deviation of the time series of ranks R_{RTPL} calculated in accordance with paragraph 9(b);
- $cov(R_{HPL}, R_{RTPL})$ = the covariance calculated in accordance with paragraph 9(c) between the time series of ranks R_{HPL} and R_{RTPL} .

- (d) An institution shall produce the time series of ranks referred to in point (b) from an originating time series by performing the following steps in sequence:
- (i) for each observation within the originating time series, count the number of observations with a lower value than that observation within that times series;
 - (ii) label each observation with the number resulting from the application of point (i) increased by one;
 - (iii) where, as a result of the application of point (ii), two or more observations are labelled with the same number, an institution shall in addition increase the numbers of those labels with the decimal fraction of one divided by the quantity of the labels with the same number;
 - (iv) consider as time series of ranks the time series of the labels obtained in accordance with points (ii) and (iii).
- (e) An institution shall calculate the standard deviation of the time series of ranks R_{HPL} in accordance with the formula in point (i), the standard deviation of the time series of ranks R_{RTPL} in accordance with the formula in point (ii) and the covariance between them in accordance with the formula in point (iii) as follows:

(i)

$$\sigma_{R_{HPL}} = \sqrt{\frac{\sum_{i=1}^{250} (R_{HPL_i} - \mu_{R_{HPL}})^2}{249}}$$

(ii)

$$\sigma_{R_{RTPL}} = \sqrt{\frac{\sum_{i=1}^{250} (R_{RTPL_i} - \mu_{R_{RTPL}})^2}{249}}$$

(iii)

$$cov(R_{HPL}, R_{RTPL}) = \frac{\sum_{i=1}^{250} (R_{HPL_i} - \mu_{R_{HPL}}) \times (R_{RTPL_i} - \mu_{R_{RTPL}})}{249}$$

Where:

- i = the index that denotes the observation in the time series of ranks;
- R_{HPL_i} = the 'i-th' observation of the time series of ranks R_{HPL} ;
- $\mu_{R_{HPL}}$ = the mean of the time series of ranks R_{HPL} ;
- R_{RTPL_i} = the 'i-th' observation of the time series of ranks R_{RTPL} ;
- $\mu_{R_{RTPL}}$ = the mean of the time series of ranks R_{RTPL} .

6. In order to calculate the *Kolmogorov-Smirnov test metric* for a trading desk referred to in paragraph 4 of this Article, an institution shall perform the following steps in sequence:
- (a) determine the time series of the most recent 250 *business days* of observations of the hypothetical and theoretical changes in the trading desk portfolio's value;

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- (b) compute the empirical cumulative distribution function of the hypothetical changes in the trading desk portfolio's value from the time series of the hypothetical changes referred to in point (a);
- (c) compute the empirical cumulative distribution function of the theoretical changes in the trading desk portfolio's value from the time series of theoretical changes referred to in point (a); and
- (d) obtain the *Kolmogorov-Smirnov test metric* by calculating the maximum difference observed between the two empirical cumulative distributions calculated in accordance with points (b) and (c) at any possible value of profit and loss.

For the purpose of this paragraph, the empirical distribution function obtained from a time series shall be understood as the function that, given any number as input, results in the ratio of the number of observations within the time series with lower or equal value than the input number, to the number of observations within the full time series.

- 7. For the purpose of determining the consequences for trading desks for which theoretical changes in their portfolio's value are not sufficiently close to the hypothetical changes in the trading desk portfolio's value, an institution shall classify each of the trading desks as green zone, orange zone, yellow zone or red zone trading desk as set out in sub-paragraphs (2) to (5). An institution shall classify trading desks as follows:
 - (a) A trading desk shall be classified as a 'green zone desk' where both of the following conditions are met:
 - (i) the *Spearman correlation coefficient* for the trading desk, is greater than 0.8; and
 - (ii) the *Kolmogorov-Smirnov test metric* for the trading desk, is lower than 0.09;
 - (b) A trading desk shall be classified as a 'red zone desk' where either of the following conditions is met:
 - (i) the *Spearman correlation coefficient* for the trading desk is lower than 0.7; or
 - (ii) the *Kolmogorov-Smirnov test metric* for the trading desk, is greater than 0.12;
 - (c) a trading desk which is not classified as either a green zone or a red zone desk, and where the own funds requirements for the positions assigned to the trading desk was computed in the previous quarter in accordance with Market Risk: Advanced Standardised Approach (CRR) Part, shall be classified as an orange zone desk; and
 - (d) a trading desk which is not a green zone, orange zone or red zone desk shall be classified as a yellow zone desks.
- 8. An institution shall perform the tests relating to the *P&L attribution requirement* on a quarterly basis for all trading desks for which the institution has an *IMA permission* to calculate the own funds requirements using internal models.
- 9. An institution shall:
 - (a) calculate the theoretical changes in a trading desk's portfolio value based on a comparison between the portfolio's end-of-day value and, assuming unchanged positions, the value of that portfolio at the end of the subsequent day;
 - (b) base theoretical changes in a trading desk's portfolio on the pricing methods, model parametrisations, market data and any other technique used in the *risk measurement model*; and
 - (c) only include in the theoretical changes in a trading desk's portfolio value the changes in the value of all risk factors included in the *risk measurement model* to which an institution applies the scenarios of future shocks for the purpose of calculating the expected shortfall

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risk measure referred to in Article 325bb or the stress scenario risk measure referred to in Article 325bk.

10. An institution shall compute hypothetical changes in a trading desk portfolio's value as set out in paragraph 11 of Article 325bf.
11. An institution may replace the input data of a risk factor used for calculation of theoretical changes with data for hypothetical changes in accordance with the following:
 - (a) it may replace such input data only in the following situations:
 - (i) to use the same provider of input data for theoretical changes as is used for hypothetical changes;
 - (ii) to align the time of day of input data for theoretical changes with the time of day of input data for hypothetical changes;
 - (b) for the purpose of this replacement, an institution shall either:
 - (i) directly replace the input data for theoretical changes with the input data used for hypothetical changes; or
 - (ii) use the input data used for hypothetical changes as the basis for calculating data to replace the input data for theoretical changes, provided that for the approach in this point (ii), an institution shall document, validate and justify all instances where data calculated from the input data for hypothetical changes is calculated using techniques or transformation methods other than those in the institution's *risk measurement model*;
 - (c) for the purpose of this replacement, an institution shall not apply further adjustments to theoretical or hypothetical changes to address residual operational noise that may remain after the replacement; and
 - (d) an institution shall document its reasons for all instances where the replacement referred to in paragraph 11 is applied.
12. An institution shall have policies and procedures in place defining how they calculate the theoretical changes in accordance with paragraphs 9 and 11 of this Article in accordance with the following:
 - (a) the policies and procedures shall include at least an explanation of how the theoretical changes in the trading desk portfolio's value are calculated for modellable and non-modellable risk factors;
 - (b) where designing the procedures for aligning the data in accordance with paragraph 11 of this Article, an institution shall:
 - (i) compare the theoretical changes in the trading desk portfolio's value without the alignments referred to in paragraph 11 of this Article, and the theoretical changes in the trading desk portfolio's value with the alignments referred to in paragraph 11 of this Article and they shall document that comparison; and
 - (ii) assess the effect of the alignments on the metrics of the test relating to the *P&L attribution requirements* referred to in paragraphs 5 and 6 of this Article and document that assessment; and
 - (c) An institution shall document any adjustments to input data for the risk factors within the calculation of the theoretical changes in the trading desk portfolios performed in accordance with paragraph 11 of this Article, as well as the rationale for such adjustments.

[Note: Paragraphs (1) to (3) of this rule correspond to Article 325bg(1) to (3) of *CRR* as it applied immediately before revocation by the *Treasury*]

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ARTICLE 325bh REQUIREMENTS ON RISK MEASUREMENT

1. An institution using a *risk measurement model* that is used to calculate the own funds requirements for market risk as referred to in Article 325ba shall ensure that that model meets all the following requirements:
 - (a) the *risk measurement model* shall capture a sufficient number of risk factors, which shall include at least the risk factors referred to in Articles 325l – 325q of Market Risk: Advanced Standardised Approach (CRR) Part unless the institution is able:
 - (i) to demonstrate that the omission of one or more of those risk factors does not have a material impact on the results of the *P&L attribution requirement*; and
 - (ii) to justify why it has incorporated a risk factor in its pricing model but not in its *risk measurement model*;
and the omission of the risk factor is specified in the institution's *IMA permission*.
 - (b) the *risk measurement model* shall capture nonlinearities for options and other products as well as correlation risk and basis risk;
 - (c) the *risk measurement model* shall incorporate a set of risk factors that correspond to the interest rates in each currency in which the institution has interest rate sensitive on- or off-balance-sheet positions;
 - (d) the yield curves shall meet the following requirements:
 - (i) the institution shall model the yield curves using one of the generally accepted approaches;
 - (ii) the yield curve shall be divided into various maturity segments to capture the variations of volatility of rates along the yield curve;
 - (iii) for material exposures to interest-rate risk in the major currencies and markets, the yield curve shall be modelled using a minimum of six maturity segments;
 - (iv) the number of risk factors used to model the yield curve shall be proportionate to the nature and complexity of the institution's trading strategies; and
 - (v) the model shall also capture the risk spread of less than perfectly correlated movements between different yield curves or different financial instruments on the same underlying *issuer*;
 - (e) the *risk measurement model* shall incorporate risk factors corresponding to gold and to the individual foreign currencies in which the institution's positions are denominated;
 - (f) the actual foreign exchange positions of a CIU shall be taken into account, provided that:
 - (i) for this purpose, an institution may rely on third-party reporting of the foreign exchange position of the CIU, provided that the correctness of that report is adequately ensured; and
 - (ii) the institution shall carve out from the internal models those foreign exchange positions of a CIU of which it is not aware, and shall treat them in accordance with Market Risk: Advanced Standardised Approach (CRR) Part;
 - (g) the sophistication of the modelling technique shall be proportionate to the materiality of the institution's activities in the equity markets. The *risk measurement model* shall use a separate risk factor at least for each of the equity markets in which the institution holds significant positions and at least one risk factor that captures systemic movements in equity prices and the dependency of that risk factor on the individual risk factors for each equity market;

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- (h) the *risk measurement model* shall use a separate risk factor at least for each commodity in which the institution holds significant positions, unless the institution has a small aggregate commodity position compared to all its trading activities, in which case it may use a separate risk factor for each broad commodity type; for material exposures to commodity markets, the model shall capture the risk of less than perfectly correlated movements between commodities that are similar, but not identical, the exposure to changes in forward prices arising from maturity mismatches, and the convenience yield between derivative and cash positions;
 - (i) the proxies used shall show a good track record for the actual position held, shall be appropriately conservative, and shall be used only where the available data are insufficient, such as during the period of stress referred to in point (c) of Article 325bc(2);
 - (j) for material exposures to volatility risks in instruments with optionality, the *risk measurement model* shall capture the dependency of implied volatilities across strike prices and options' maturities; and
 - (k) an institution shall periodically and at least annually demonstrate that the modelling of positions in CIUs in their *risk measurement model* leads to own funds requirements that are at least as conservative as if a look-through approach was applied to those positions.
2. An institution may use empirical correlations within broad categories of risk factors and, for the purpose of calculating the unconstrained expected shortfall measure *UES*, as referred to in Article 325bb(1), across broad categories of risk factors only where the institution's approach for measuring those correlations is sound, consistent with the applicable liquidity horizons, and implemented with integrity.
3. An institution shall ensure that:
- (a) for the purpose of calculating the partial expected shortfall calculations referred to in Article 325bc, the data inputs used in their *risk measurement model* meet the requirements in paragraphs 4 to 10 of this Article;
 - (b) where the data inputs used for a risk factor in the *risk measurement model* do not meet the requirements in paragraphs 4 to 10 of this Article, institution deems the risk factor shall be deemed as non-modellable and shall calculate the own funds requirements for market risk in accordance with Article 325bk for that risk factor; and
 - (c) it considers the coefficients of a multifactor model as non-modellable risk factors in accordance with Article 325be unless the coefficients of that multifactor model are determined empirically based on historical data.

Data inputs derived from combination of modellable risk factors

4. An institution shall ensure that:
- (a) it derives data input used in an institution's *risk measurement model* from only modellable risk factors. An institution may use interpolation from a combination of modellable risk factors to determine a data input; provided that if so specified in the *IMA permission*, an institution may use extrapolation to determine a data input if the extrapolation is only a reasonable distance from the closest modellable risk factor;
 - (b) where an institution uses interpolation or extrapolation to generate a data input for the institution's *risk measurement model*, it must determine the theoretical changes in portfolio value for the *P&L attribution requirements* in accordance with Article 325bg using that same interpolation or extrapolation; and
 - (c) by way of derogation, where an institution additionally calculates a stress scenario risk measure referred to in Article 325bk for one or more non-modellable risk factors that relate to that data input, the institution may also include the changes in those non-modellable risk

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factors for the purposes of determining the theoretical changes in portfolio value for the P&L attribution requirements in accordance with Article 325bg.

Systematic and idiosyncratic market risk

5. An institution shall ensure the data inputs used for their *risk measurement model* are appropriate for adequately capturing both systematic and idiosyncratic market risk.

Where the data inputs in paragraph 11 do not allow for adequate capture of systematic or idiosyncratic market risks, the institution shall ensure that the systematic or idiosyncratic market risk is capitalised separately through non-modellable risk factors in accordance with the methodology set out in Article 325bk.

Reflection of volatility and correlation

6. An institution shall ensure that:
- (a) the data inputs used in their *risk measurement model* accurately reflect the volatilities of and correlations between risk factors that are included in the *risk measurement model*; and
 - (b) any transformations applied to data inputs shall not have the effect of reducing the accuracy of the volatility of and correlations between risk factors that are included in the *risk measurement model*.

Consistency of data inputs with verifiable prices and with front-office and back-office prices

7. An institution shall perform at least quarterly analysis to compare price series in point (a) with the alternative price series in points (b), (c) and (d) as follows:
- (a) the price series used in the *risk measurement model*;
 - (b) price data used to generate the actual changes in the value of the portfolio and the hypothetical changes in the value of the portfolio;
 - (c) verifiable prices in accordance with Article 325be; and
 - (d) price data used in the independent price verification process in accordance with paragraph 8 of Trading Book (CRR) Article 105 including daily and intra-month data where this is collected.
8. For the purpose of performing the analysis in paragraph 7 of this Article, the institution:
- (a) shall compare the levels, volatilities and correlations of price series from these four alternative price series for the purpose of highlighting differences between the sources that are material in terms of their impact on the measurement of the expected shortfall;
 - (b) shall, where the four alternative price series are derived from overlapping underlying data, explicitly reflect this in the analysis. The institution shall give due considerations to price uncertainty; and
 - (c) shall combine all available information, including information about intra-day movements, to derive a statistical test or tests that monitor price series referred to this paragraph to assess whether the price data used in the *risk measurement model* results in an understatement of the measurement of the expected shortfall,

provided that, for the purposes of any analysis involving the price series in paragraph 7(c), the institution may perform the assessment on a best efforts basis.

9. An institution shall appropriately review and escalate the methodologies and results of the analysis in this Article. Where a potential understatement of ES is detected, an institution shall consider at least one of the following actions:
- (a) make appropriate adjustments to the inputs or output of the risk measurement;

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- (b) consider those risk factors to be non-modellable in accordance with Article 325be.

Frequency of updating data inputs

10. An institution shall ensure that:
- (a) the data inputs used for their *risk measurement model* are updated at least weekly; provided that by way of derogation from this requirement, an institution may update certain data inputs for their *risk measurement model* less frequently than weekly but not less frequently than monthly, where the institution is able to demonstrate that less frequent updates are appropriate or necessary;
 - (b) where it uses regressions to estimate model parameters for their *risk measurement model*, it re-estimates such parameters with sufficient frequency and at least fortnightly. By way of derogation from this requirement an institution may re-estimate certain model parameters for their *risk measurement model* less frequently than fortnightly if the institution is able to demonstrate that less frequent re-estimation is appropriate or necessary and this is specified in the institution's *IMA permission*;
 - (c) its *risk measurement models* are calibrated to current market prices which are of the same observation period as the calibration of front office pricing models;
 - (d) it has a workflow process for updating the sources of data that allows it to obtain alternative data sources in a timely manner where the data sources presently used cease to be available; and
 - (e) it has clear policies for backfilling and gap-filling missing data in a timely manner where appropriate.

Data inputs for stress period

11. An institution shall ensure that the data inputs used for their *risk measurement model* for the purpose of calculating the partial expected shortfall calculations referred to in Article 325bc(2) are determined directly from market prices in the period of significant financial stress identified in accordance with Article 325bc(2)(c); provided that, by way of derogation from this requirement, where the fundamental characteristics of a certain risk factor now differ from the characteristics of that risk factor in the identified period of significant financial stress and the institution is able to empirically justify each instance where the derogation is applied, an institution may determine stressed data inputs from market prices other than those in the identified period of significant financial stress.
12. Where a risk factor did not exist in the identified period of significant financial stress, an institution may determine data inputs from market prices other than those relating to that risk factor in the identified period of significant financial stress, subject to the following requirements:
- (a) it shall be able to empirically justify that the data inputs used are consistent with the level of changes observed in similar risk factors in the identified historical period; and
 - (b) it shall not include the idiosyncratic component of name-specific risk factors in the subset of modellable risk factors chosen in point (a) of Article 325bc(2), unless specified otherwise in its *IMA permission*;

provided that, where an institution is unable to empirically justify that the data inputs used are consistent with the level of changes observed in similar risk factors in the identified historical period, the risk factor shall not be included in the subset of modellable risk factors chosen in point (a) Article 325bc(2) and specified in the institution's *IMA permission*.

Use of proxies

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13. Where an institution uses as proxy for a risk factor one or more other risk factors, an institution shall ensure that:
 - (a) the methodologies for generating the proxy are conceptually and empirically sound; and
 - (b) the proxy appropriately represents the characteristics of the risk factor being proxied.
14. Where an institution uses a proxy to represent a risk factor in the *risk measurement model*, it must use the value of the proxy rather than the risk factor itself for calculating the theoretical changes in portfolio value for the *P&L attribution requirements* in accordance with Article 325bg. By way of derogation from this requirement, an institution may use the value of the actual risk factor for calculating the theoretical changes in portfolio value for the *P&L attribution requirements* in accordance with Article 325bg, subject to meeting the following conditions:
 - (a) the institution is able to identify the basis between the proxy and the actual risk factor; and
 - (b) the institution adequately capitalises the basis identified between the proxy and the actual risk factor either through the methodology set out in Article 325bb or through Article 325bk if the risk factor is non-modellable in accordance with Article 325be.

[Note: Paragraphs (1) and (2) of this rule correspond to Article 325bh(1) and (2) of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 325bi QUALITATIVE REQUIREMENTS

1. An institution shall ensure that any *risk measurement model* used for the purposes of this Part shall be conceptually sound and be calculated and implemented with integrity, and ensure that it meets the following qualitative requirements:
 - (a) any *risk measurement model* used to calculate capital requirements for market risk shall be closely integrated into the daily risk management process of the institution and shall serve as the basis for reporting risk exposures to senior management;
 - (b) an institution shall have a risk control unit that:
 - (i) is independent from business trading units and that reports directly to senior management;
 - (ii) is responsible for designing and implementing any *risk measurement model*;
 - (iii) conducts the initial and on-going validation of any internal model used for the purposes of this Part;
 - (iv) is responsible for the overall risk management system; and
 - (v) produces and analyses daily reports on the output of any internal model used to calculate capital requirements for market risk, as well as reports on the appropriateness of measures to be taken in terms of trading limits;
 - (c) the management body and senior management shall be actively involved in the risk-control process;
 - (d) daily reports produced by the risk control unit shall be reviewed at a level of management with sufficient authority to require the reduction of positions taken by individual traders and to require the reduction of the institution's overall risk exposure;
 - (e) the institution shall have a sufficient number of staff with a level of skills that is appropriate to the sophistication of the *risk measurement model*, and a sufficient number of staff with skills in the trading, risk control, audit and back-office area;

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- (f) the institution shall have in place a documented set of internal policies, procedures and controls for monitoring and ensuring compliance with the overall operation of its *risk measurement models*;
- (g) each of its *risk measurement models*, including any pricing model, shall have a proven track record of being reasonably accurate in measuring risks, and shall not differ significantly from the models that the institution uses for its internal risk management;
- (h) the institution shall frequently conduct rigorous programmes of stress testing, including reverse stress tests that meet the following requirements:
 - (i) the tests shall encompass each *risk measurement model*;
 - (ii) the results of those stress tests shall be reviewed by senior management at least on a monthly basis;
 - (iii) the stress tests shall comply with the policies and limits approved by the management body; and
 - (iv) the institution shall take appropriate actions where the results of those stress tests show excessive losses arising from the trading's business of the institution under certain circumstances; and
- (i) the institution shall conduct an independent review of its *risk measurement models*, either as part of its regular internal auditing process, or by mandating a third-party undertaking to conduct that review. Such independent review shall include both the activities of the business trading units and the independent risk control unit.

For the purposes of point (i), a third-party undertaking means an undertaking that provides auditing or consulting services to institutions and that has staff who have sufficient skills in the area of market risk in trading activities.

2. The institution shall conduct a review of its overall risk management process at least once a year which shall assess the following:
 - (a) the adequacy of the documentation of the risk management system and process and the organisation of the risk control unit;
 - (b) the integration of risk measures into daily risk management and the integrity of the management information system;
 - (c) the processes the institution employs for approving the risk-pricing models and valuation systems that are used by front and back-office personnel;
 - (d) the scope of risks captured by the model, the accuracy and appropriateness of the risk-measurement system, and the validation of any significant changes to the *risk measurement model*;
 - (e) the accuracy and completeness of position data, the accuracy and appropriateness of volatility and correlation assumptions, the accuracy of valuation and risk sensitivity calculations, and the accuracy and appropriateness for generating data proxies where the available data are insufficient to meet the requirement set out in this Part;
 - (f) the verification process that the institution employs to evaluate the consistency, timeliness and reliability of the data sources used to run any of its *risk measurement models*, including the independence of those data sources;
 - (g) the verification process that the institution employs to evaluate *back-testing requirements* and *P&L attribution requirements* that are conducted in order to assess the accuracy of its *risk measurement models*; and

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- (h) where the review is performed by a third-party undertaking in accordance with point (h) of paragraph 1 of this Article, the verification that the internal validation process set out in Article 325bj fulfils its objectives.
3. An institution shall update the techniques and practices it uses for any of the *risk measurement models* used for the purposes of this Part to take into account the evolution of new techniques and best practices that develop in respect of those *risk measurement models*.

[Note: This rule corresponds to Article 325bi of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 325bj INTERNAL VALIDATION

1. An institution shall have processes in place to ensure that any *risk measurement models* used for the purposes of this Part have been adequately validated by suitably qualified parties that are independent of the development process, in order to ensure that any such models are conceptually sound and adequately capture all material risks.
2. An institution shall conduct the validation referred to in paragraph 1 of this Article in the following circumstances:
- (a) when any *risk measurement model* is initially developed and when any significant changes are made to that model; and
- (b) on a periodic basis, and where there have been significant structural changes in the market or changes to the composition of the portfolio which might lead to the *risk measurement model* no longer being adequate.
3. An institution shall not limit the validation of the *risk measurement models* of an institution to *back-testing requirements* and *P&L attribution requirements*, but shall, at a minimum, include the following:
- (a) tests to verify whether the assumptions made in the internal model are appropriate and do not underestimate or overestimate the risk;
- (b) own internal model validation tests, including back-testing in addition to the regulatory back-testing programmes, in relation to the risks and structures of their portfolios; and
- (c) the use of hypothetical portfolios to ensure that the *risk measurement model* is able to account for particular structural features that may arise, for example, material basis risks and concentration risk, or the risks associated with the use of proxies.

[Note: This rule corresponds to Article 325bj of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 325bk CALCULATION OF STRESS SCENARIO RISK MEASURE

1. For the purposes of this Article, the 'stress scenario risk measure' of a given non-modellable risk factor means the loss that is incurred in all trading book positions or *non-trading book positions* that are subject to foreign exchange or commodity risk of the portfolio which includes that non-modellable risk factor when an extreme scenario of future shock is applied to that risk factor.
2. An institution shall develop appropriate extreme scenarios of future shock for all non-modellable risk factors.

Development of extreme scenarios of future shock for individual risk factors

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3. An institution shall develop the extreme scenarios of future shock for a single non-modellable risk factor for the purposes of paragraph 2 of this Article such that the resulting stress scenario risk measure is at least as conservative as:
- (a) an expected shortfall measure calculated for that non-modellable risk factor alone;
 - (b) for the stress period in accordance with paragraph 10 of this Article;
 - (c) at 97.5th percentile, one tailed confidence interval;
 - (d) calculated with base time horizon of 10 days; and
 - (e) scaled to a time horizon that is the greater of 20 days and the liquidity horizon of that non-modellable risk factor in accordance with the following formula:

$$SS_j = SS_j(T) \sqrt{\frac{\max(20, LH_j)}{10}}$$

Where:

- SS_j = the standalone expected shortfall measure of non-modellable risk factor j
- LH_j = the liquidity horizon of non-modellable risk factor j, as set out in Article 325bd
- T = the base time horizon, where $T = 10$ days
- $SS_j(T)$ = the expected shortfall measure that is determined with a 10-day time horizon for only the non-modellable risk factor j

4. An institution may use a variety of methodologies for developing the extreme scenarios of future shock for different non-modellable risk factors and shall:
- (a) apply those methodologies in a consistent manner across similar non-modellable risk factors;
 - (b) document a clear rationale for the methodology used for each non-modellable risk factor; and
 - (c) validate that the methodologies meet the conditions in paragraph 3 of this Article.
5. In developing the extreme scenarios of future shocks in accordance with paragraph 3 of this Article an institution shall ensure that the extreme scenarios of future shock adequately consider any limitations to the methodologies used, including but not limited to:
- (a) any skewness or kurtosis in the distribution of returns on the non-modellable risk factor; and
 - (b) any material non-linearity in the institution's portfolio with respect to that non-modellable risk factor.

Conceptually, an institution shall estimate the confidence interval around the extreme scenarios of future shocks produced by their methodologies due to the methodological limitations, and ensure that the extreme scenarios of future shocks used are at the conservative end of that confidence interval.

6. Where an institution determines the extreme scenarios of future shock based on a proxy risk factor, the institution shall demonstrate that that proxy results in a stress scenario risk measure that meets the conditions in paragraph 3 of this Article with a high degree of confidence. Where an institution determines the extreme scenarios of future shock indirectly by scaling to the stress period a risk measure calibrated to another period of time, the institution shall demonstrate that the scalar is generally appropriate for the non-modellable risk factors to which

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it is applied and results in stress scenario risk measures that meet the conditions in paragraph 3 of this Article with a high degree of confidence.

Development of extreme scenarios of future shock at standardised bucket level

7. By way of derogation from paragraph 3 of this Article, where an institution has simultaneously assessed the modellability of more than one non-modellable risk factor by assessing the modellability of a single standardised bucket in accordance with Article 325be, the institution may instead develop joint extreme scenarios of future shock for all risk factors in that single standardised bucket for the purposes of paragraph 2 of this Article such that the resulting stress scenario risk measure is at least as conservative as:
- an expected shortfall measure calculated for non-modellable risk factors included in that standardised bucket only;
 - for the stress period in accordance with paragraph 10 of this Article;
 - at 97.5th percentile, one tailed confidence interval;
 - calculated with base time horizon of 10 days; and
 - scaled to a time horizon that is the greater of 20 days and the liquidity horizon of that non-modellable risk factor in accordance with the following formula:

$$SS_j = SS_j(T) \sqrt{\frac{\max(20, LH_j)}{10}}$$

Where:

- SS_j = the standalone expected shortfall measure of the non-modellable risk factors in standardised bucket j
- LH_j = the liquidity horizon of the non-modellable risk factors in standardised bucket j, as set out in Article 325bd
- T = the base time horizon, where $T = 10$ days
- $SS_j(T)$ = the expected shortfall measure that is determined with a 10-day time horizon for only the non-modellable risk factors in standardised bucket j

For the extreme scenarios of future shock, an institution shall comply with the requirements in paragraph 3 of this Article.

Calculation and use of time series of returns for developing extreme scenarios of future shock

8. Where an institution elects to determine the extreme scenarios of future shock based on a time series of returns on the non-modellable risk factor or returns on other risk factors, the institution shall use a time series of 10 *business days* returns that are determined as follows:
- they shall determine the time series of observations for the non-modellable risk factor for the relevant period;
 - by way of derogation from the first paragraph, they may extend the time series referred to in point (a) by including the observations available within the period of 20 *business days* following the stress period; where the reference date for the calculation of the stress scenario risk measure is less than 20 *business days* after the end of the stress period, an institution may include those observations that are available from the end of the stress period to the reference date;
 - in relation to each date D_t , for which there is an observation in the time series resulting from point (a) excluding the last observation, an institution shall determine the date $D_{t'}$ following D_t , that minimises the following value:

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$$v = \left| \frac{10 \text{ business days}}{D_{t'} - D_t} - 1 \right|$$

where:

D_t = the date for which there is an observation in the time series referred to in point (a), excluding the last observation;

$-D_{t'}$ = a date following D_t ;

the difference $D_{t'} - D_t$ is expressed in *business days*

Where there is more than one date minimising that value, the date $D_{t'}$ shall be the date among those minimising that value that occurred later in time;

- (d) for each date D_t , for which there is an observation in the time series resulting from point (a) excluding the last observation, they shall determine the corresponding 10 *business days* return by determining the return for the non-modellable risk factor over the period between the date D_t , of the observation and the date $D_{t'}$ minimising the value v in accordance with point (b), and subsequently rescaling it to obtain a return over a 10 *business days* period by multiplying the return with

$$\sqrt{\frac{10 \text{ business days}}{D_{t'} - D_t}}$$

9. Where an institution does not have a complete time series of returns as determined in accordance with paragraph 8 to develop their extreme scenarios of future shock for a non-modellable risk factor, the institution shall demonstrate that the methodologies they use to determine the extreme scenarios of future shock are accurate and result in stress scenario risk measures that meet the conditions in paragraph 3 of this Article with a high degree of confidence.

Determination of stress period

10. An institution shall determine the stress period for the non-modellable risk factors in each broad risk factor category referred to in Article 325bd by identifying the 12-months observation period maximising the following value:

$$\sum_{j \in i} SS_j$$

Where:

i = the broad risk factor category;

j = the index denoting the non-modellable risk factors or the non-modellable standardised buckets for which the institution calculates the stress scenario risk measure belonging to the broad risk factor category;

SS_j = the stress scenario risk measure for the non-modellable risk factor or the non-modellable standardised bucket j calculated in accordance with paragraphs 3, 4 and 7 of this Article.

By way of derogation from the first paragraph, an institution may determine the stress period for the non-modellable risk factors in each broad risk factor category by identifying the 12-months observation period maximising the partial expected shortfall measure $PE S^{RS,i}$ referred to in paragraph 1 of Article 325bb. Where the institution applies this derogation, it shall provide evidence that the stress period identified represents a period of financial stress for its non-

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modellable risk factors; when doing so, it shall take into account how its portfolio is exposed to the non-modellable risk factors in the broad risk factor category.

For the purposes of identifying the stress period, an institution shall use historical data starting at least from 1 January 2007. An institution shall review the stress period identified at least with a quarterly frequency.

Regulatory extreme scenario of future shock

11. Where an institution is unable to develop an extreme scenario of future shock in accordance with paragraphs 3 to 7 of this Article, the institution must use a regulatory extreme scenario of future shock, being a shock that leads to the stress scenario risk measure being the maximum loss that may occur due to a change in the non-modellable risk factor where such maximum loss is finite.
12. Where the maximum loss referred to in paragraph 11 of this Article is not finite, an institution shall apply the following steps in sequence for determining the regulatory extreme scenario of future shock:
 - (a) it shall use an expert-based approach using qualitative and quantitative information available to identify a loss due to a change in the value taken by the non-modellable risk factor that will not be exceeded with a level of certainty equal to 99.95% on a 10 *business day* horizon in a future period of financial stress equivalent to the stress period identified for the non-modellable risk factor; when doing so, an institution shall take into account the skewness and the excess kurtosis that may characterise the returns of the non-modellable risk factor in a period of financial stress and shall justify any distributional or statistical assumptions taken for identifying that loss;
 - (b) it shall determine the maximum loss as follows:

$$loss_{max} = \max(loss_x, loss_{Hist^+}, loss_{Hist^-})$$

where:

$loss_{max}$ = the maximum loss;

$loss_x$ = the loss resulting from point (a);

$loss_{Hist^+}$ = the loss that would result from the greatest historically observed 10-day increase in the non-modellable risk factor since 1 January 2007;

$loss_{Hist^-}$ = the loss that would result from the greatest historically observed 10-day decrease in the non-modellable risk factor since 1 January 2007;

- (c) it shall multiply the maximum loss obtained in accordance with point b by

$$\sqrt{\frac{\max(20, LH)}{10}},$$

where:

LH = liquidity horizon of non-modellable risk factor j , as set out in Article 325bd;

and

- (d) it shall identify the regulatory extreme scenario of future shock as the shock leading to the stress scenario risk measure being the scaled maximum loss identified in point (c).

An institution shall not use the regulatory extreme scenario of future shock to calculate a single stress scenario risk measure for more than one non-modellable risk factor in a standardised bucket.

Aggregation of stress scenario risk measures

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13. An institution shall calculate the aggregate stress scenario risk measure for the purposes of Article 325ba by applying the following formula:

$$SS_{total} = \sqrt{\sum_{k \in I^{CSR}} (SS_k)^2} + \sqrt{\sum_{l \in I^{EQ}} (SS_l)^2} + \sqrt{\left(\rho \times \sum_{j \in OR} SS_j\right)^2 + (1 - \rho^2) \times \sum_{j \in OR} (SS_j)^2}$$

Where:

I^{CSR} = the set of non-modellable risk factors or non-modellable standardised buckets for which the institution determined a stress scenario risk measure that was classified as reflecting idiosyncratic credit spread risk only, in accordance with this Article;

k = an index denoting the non-modellable risk factors or non-modellable standardised buckets belonging to I^{CSR} ;

I^{EQ} = the set of non-modellable risk factors or non-modellable standardised buckets for which the institution determined a stress scenario risk measure that was classified as reflecting idiosyncratic equity risk only, in accordance with this Article;

l = an index denoting the non-modellable risk factors or non-modellable standardised buckets belonging to I^{EQ} ;

OR = the set of non-modellable risk factors or non-modellable standardised buckets for which the institution determined a stress scenario risk measure that was neither classified as reflecting idiosyncratic credit spread risk only, nor idiosyncratic equity risk only, both as in accordance with this Article;

j = an index denoting the non-modellable risk factors or non-modellable standardised buckets belonging to OR ;

SS_k, SS_l, SS_j = respectively the stress scenario risk measures for the non-modellable risk factors or the non-modellable standardised buckets k, l, j calculated in accordance with paragraphs 3, 4 and 7 of this Article;

SS_{total} = the stress scenario risk measure for the purposes of Article 325ba;

ρ = 0.6.

14. An institution shall ensure that non-modellable risk factors that the institution classifies as reflecting only idiosyncratic credit spread risk meet all the following conditions:
- the nature of the risk factor is such that it shall reflect idiosyncratic credit spread risk only;
 - the value taken by the risk factor shall not be driven by systematic risk components;
 - the correlation among risk factors is negligible;
 - there are no material subsets within that set of idiosyncratic risk factors that have non-negligible correlation;
 - there are no important systematic risk factors that are not considered and that could explain some of the movements in those non-modellable risk factors; and
 - the institution performs and documents the statistical tests used to verify the conditions in points (c), (d) and (e) of this paragraph.
15. The institution shall ensure that non-modellable risk factors that the institution classifies as reflecting only idiosyncratic equity risk meet all the following conditions:
- the nature of the risk factor is such that it shall reflect idiosyncratic equity risk only;

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- (b) the value taken by the risk factor shall not be driven by systematic risk components;
- (c) the correlation among risk factors is negligible;
- (d) there are no material subsets within that set of idiosyncratic risk factors that have non-negligible correlation;
- (e) there are no important systematic risk factors that are not considered and that could explain some of the movements in those non-modellable risk factors; and
- (f) the institution performs and documents the statistical tests used to verify the conditions in points (c), (d) and (e) of this paragraph.

[Note: Paragraphs (1) and (2) of this rule corresponds to Article 325bk(1) and (2) of *CRR* as it applied immediately before revocation by the *Treasury*]

SECTION 3 INTERNAL DEFAULT RISK MODEL

ARTICLE 325bl SCOPE OF THE INTERNAL DEFAULT RISK MODEL

1. An institution shall hold an own funds requirement for default risk in respect of all the positions of the institution that have been assigned to the trading desks for which the institution has been granted an *IMA permission* where those positions contain at least one risk factor that has been mapped to the broad categories of 'equity' or 'credit spread' risk factors in accordance with Article 325bd(1).
2. The institution shall calculate the own funds requirement for default risk, which is incremental to the risks captured by the own funds requirements referred to in Article 325ba (1), using the institution's *internal default risk model*.
3. An institution shall ensure that the *internal default risk model* complies with the requirements laid down in Articles 325bl to 325bp.
4. For each of the positions referred to in paragraph 1, an institution shall identify one *issuer* of traded debt or equity instruments related to at least one risk factor.

[Note: This rule corresponds to Article 325bl of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 325bm PERMISSION TO USE AN INTERNAL DEFAULT RISK MODEL

1. Subject to paragraph 3, an institution which has been granted an *IMA permission* by the *PRA* must use an *internal default risk model* to calculate the own funds requirements referred to in Article 325ba(2) for all the trading book positions referred to in Article 325bl that are assigned to a trading desk for which the *internal default risk model* complies with the requirements set out in Articles 325bi, 325bj, 325bn, 325bo and 325bp.
2. Where the trading desk of an institution, to which at least one of the trading book positions referred to in Article 325bl has been assigned, does not meet the requirements set out in paragraph 1 of this Article, the institution must calculate the own funds requirements for market risk of all positions in that trading desk in accordance with the approach set out in Market Risk: Advanced Standardised Approach (*CRR*) Part. The institution may resume the use of internal models in accordance with this Part to calculate own funds requirements for market risk for the positions of those trading desks if the institution provides to the *PRA* a reasoned confirmation that the trading desk again fulfils all the requirements set out in paragraph 1 of this Article.
3. An institution must calculate the own funds requirements referred to in Article 325ba(2) for any trading book positions to which paragraph 2(a) and paragraph 3 of Article 147 of the Credit Risk: Internal Ratings Based Approach (*CRR*) Part applies (or would apply if the institution had

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permission from the *PRA* to use the *IRB Approach*) using the approach set out in Section 5 of the Market Risk: Advanced Standardised Approach (*CRR*) Part. An institution may not use an *internal default risk model* for this purpose.

[Note: this rule corresponds to Article 325bm of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 325bn OWN FUNDS REQUIREMENTS FOR DEFAULT RISK USING AN INTERNAL DEFAULT RISK MODEL

1. An institution shall calculate the own funds requirements for default risk using an *internal default risk model* for the portfolio of all trading book positions as referred to in Article 325bl as follows:
 - (a) the own funds requirements shall be equal to a value-at-risk number measuring potential losses in the market value of the portfolio caused by the default of *issuers* related to those positions at the 99.9% confidence interval over a one-year time horizon;
 - (b) the potential loss referred to in point (a) means a direct or indirect loss in the market value of a position which was caused by the default of the *issuers* and which is incremental to any losses already taken into account in the current valuation of the position; and the default of the *issuers* of equity positions shall be represented by the value for the *issuers'* equity prices being set to zero;
 - (c) an institution shall determine default correlations between different *issuers* on the basis of a conceptually sound methodology, using objective historical data on market credit spreads or equity prices that cover at least a 10-year period that includes the stress period identified by the institution in accordance with Article 325bc(2); the calculation of default correlations between different *issuers* shall be calibrated to a one-year time horizon; and
 - (d) it shall base the *internal default risk model* on a one-year constant position assumption.
2. An institution shall calculate the own funds requirement for default risk using an *internal default risk model* as referred to in paragraph 1 on at least a weekly basis.
3. By way of derogation from points (a) and (c) of paragraph 1, an institution may replace the one-year time horizon with a time horizon of 60 days for the purpose of calculating the default risk of some or all of the equity positions, where appropriate. In such case, the institution shall ensure that the calculation of default correlations between equity prices and default probabilities shall be consistent with a time horizon of 60 days and the calculation of default correlations between equity prices and bond prices shall be consistent with a one-year time horizon.

[Note: This rule corresponds to Article 325bn of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 325bo RECOGNITION OF HEDGES IN AN INTERNAL DEFAULT RISK MODEL

1. An institution may incorporate hedges in its *internal default risk model* and may net positions where the long positions and short positions relate to the same financial instrument.
2. In its *internal default risk model*, an institution may only recognise hedging or diversification effects associated with long and short positions involving different instruments or different securities of the same obligor, as well as long and short positions in different *issuers* by explicitly modelling the gross long and short positions in the different instruments, including modelling of basis risks between different *issuers*.
3. In its *internal default risk model*, an institution shall:

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- (a) capture material risks between a hedging instrument and the hedged instrument that could occur during the interval between the maturity of a hedging instrument and the one-year time horizon, as well as the potential for significant basis risks in hedging strategies that arise from differences in the type of product, seniority in the capital structure, internal or external ratings, maturity, vintage and other differences; and
- (b) recognise a hedging instrument only to the extent that it can be maintained even as the obligor approaches a credit event or other event.

[Note: This rule corresponds to Article 325bo of CRR as it applied immediately before revocation by the Treasury]

ARTICLE 325bp PARTICULAR REQUIREMENTS FOR AN INTERNAL DEFAULT RISK MODEL

1. An institution shall ensure that its *internal default risk model* shall be capable of modelling the default of individual *issuers* as well as the simultaneous default of multiple *issuers*, and shall take into account the impact of those defaults in the market values of the positions that are included in the scope of that model. For that purpose, an institution shall model the default of each individual *issuer* using two types of systematic risk factors.
2. An institution shall ensure that its *internal default risk model* reflects the economic cycle, including the dependency between recovery rates and the systematic risk factors referred to in paragraph 1.
3. An institution shall ensure that its *internal default risk model* reflects the nonlinear impact of options and other positions with material nonlinear behaviour with respect to price changes. An institution shall also have due regard to the amount of model risk inherent in the valuation and estimation of price risks associated with those products. An institution may use approximations when modelling default of individual *issuers* as well as the simultaneous default of multiple *issuers* for equity derivatives with multiple underlyings if so specified in its *IMA permission*.
4. An institution shall ensure that its *internal default risk model* is based on data that are objective and up-to-date.
5. To simulate the default of *issuers* in the *internal default risk model*, the institution shall ensure that its estimates of default probabilities meet the following requirements:
 - (a) the default probabilities shall be floored at 0.03%;
 - (b) the default probabilities shall be based on a one-year time horizon, unless stated otherwise in this Section;
 - (c) the default probabilities shall be measured using, solely or in combination with current market prices, data observed during a historical period of at least five years of actual past defaults and extreme declines in market prices equivalent to default events; default probabilities shall not be inferred solely from current market prices; and
 - (d) if the institution has been granted permission to estimate default probabilities in accordance with the Credit Risk: Internal Ratings Based Approach (CRR) Part, it shall use the methodology set out therein to calculate default probabilities; or
 - (e) if the institution has not been granted permission to estimate default probabilities in accordance with the Credit Risk: Internal Ratings Based Approach (CRR) Part, it shall develop an internal methodology or use external sources to estimate default probabilities; in both situations, the estimates of default probabilities shall be consistent with the requirements set out in this Article.

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6. To simulate the default of *issuers* in the *internal default risk model*, the institution shall ensure that its estimates of loss given default shall meet the following requirements:
 - (a) the loss given default estimates are floored at 0%;
 - (b) the loss given default estimates shall reflect the seniority of each position;
 - (c) if the institution has been granted permission to estimate loss given default in accordance with the Credit Risk: Internal Ratings Based Approach (CRR) Part, it shall use the methodology set out therein to calculate loss given default estimates; and
 - (d) if the institution has not been granted permission to estimate loss given default in accordance with the Credit Risk: Internal Ratings Based Approach (CRR) Part, it shall develop an internal methodology or use external sources to estimate loss given default; in both situations, the estimates of loss given default shall be consistent with the requirements set out in this Article.
7. As part of the independent review and validation of the internal models that it uses for the purposes of this Part, including for the risk-measurement system, an institution shall:
 - (a) verify that their approach for the modelling of correlations and price changes is appropriate for their portfolio, including the choice and weights of the systematic risk factors in the model;
 - (b) perform a variety of stress tests, including sensitivity analyses and scenario analyses, to assess the qualitative and quantitative reasonableness of the *internal default risk model*, in particular with regard to the treatment of concentrations; and
 - (c) apply appropriate quantitative validation including relevant internal modelling benchmarks.The tests referred to in point (b) shall not be limited to the range of past events experienced.
8. An institution shall ensure that its *internal default risk model* appropriately reflects *issuer* concentrations and concentrations that can arise within and across product classes under stressed conditions.
9. An institution shall ensure that its *internal default risk model* is consistent with the institution's internal risk management methodologies for identifying, measuring, and managing trading risks.
10. An institution shall have clearly defined policies and procedures for determining:
 - (a) the default assumptions for correlations between different *issuers* in accordance with point (c) of Article 325bn(1);
 - (b) the preferred choice of method for estimating the default probabilities in point (e) of paragraph 5 of this Article; and
 - (c) the loss given default in point (d) of paragraph 6 of this Article.
11. An institution shall document its internal models so that its correlation assumptions and other modelling assumptions are transparent.
12. [Note: Provision left blank]

[Note: Paragraphs (1) to (11) of this rule correspond to Article 325bp(1) to (11) of *CRR* as it applied immediately before revocation by the *Treasury*]

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Annex 1

Standards for grant of an IMA permission

1. The institution must establish its trading desks in accordance with the requirements of Trading Book (CRR) Part Article 104b, provided that, in respect of a notional trading desk, Article 104b(2) shall not apply.
2. The institution must have a rationale for the inclusion of the trading desk in the scope of the internal model approach; an institution must not exclude a trading desk from the scope of the internal model approach on the basis that the own funds requirement calculated in accordance with Market Risk: Advanced Standardised Approach (CRR) Part would be lower than the own funds requirement calculated under the internal model approach.
3. The institution has an arrangement in place whereby any *ineligible positions* assigned to the trading desk are managed separately for the purposes of calculation of own funds requirements for market risk in respect of those *ineligible positions*.
4. The institution does not include in the scope of the internal model approach any CIU positions for which the institution is unable to look through to the underlying positions of the CIU.5. The institution must meet and continue to meet the *back-testing requirements* of Article 325bf(3) from the 12 months preceding application.
6. An institution must certify that it complies with the requirements of:
 - (a) Article 325bg (profit and loss attribution requirement);
 - (b) Article 325bh (requirements on risk measurement); and
 - (c) Article 325bi (qualitative requirements).
7. For trading desks that have been assigned at least one of the trading book positions referred to in Article 325bl, the institution must certify that it meets the requirements set out in Article 325bm for the *internal default risk model*.

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Annex 2

Material Changes and Extensions to Internal Models

Part A

Material Changes and Extensions

1. For the purpose of Article 325azx(1), a change or extension to the use of internal models shall be considered material if it fulfils any of the following conditions:
 - (a) it is an extension which is:
 - (i) an extension of the market risk model to an additional location in another jurisdiction, including extending the market risk model to the positions of a desk located in a different time zone, or for which different front office or IT systems are used;
 - (ii) integration in the scope of an internal model of product classes, for which the ES number, computed according to Article 325ba(1)(a)(i), exceeds 5% of the ES number, computed according to Article 325ba(1)(a)(i), of the total portfolio forming the scope of that internal model before the integration; or
 - (iii) a reversion in approach where the institution seeks to limit or reduce the scope of application of an *IMA permission* a permission to use internal models;
 - (b) it is a change which is:
 - (i) a change between historical simulation, parametric or Monte Carlo ES;
 - (ii) a change in the aggregation scheme such as where a simple summation of risk numbers is replaced by integrated modelling;
 - (c) it is a change or extension which results in a change in absolute value of 1% or more, computed for the first *business day* of the testing of the impact of the extension or change, of one of the relevant risk numbers referred to in Article 325ba(1)(a)(i), or Article 325ba(1)(a)(ii), or Article 325ba(2)(a); and associated with the scope of application of the relevant internal models to which the risk number refers; and results in either of the following:
 - (i) a change of 5% or more of the sum of the risk numbers referred to in Article 325ba(1)(b), as applicable, computed at the level of the *CRR consolidation entity* or, in the case of an institution which is neither a parent institution nor a subsidiary, at the level of that institution; or
 - (ii) a change of 10% or more of one or more of the relevant risk numbers referred to in Article 325ba(1)(a)(i), Article 325ba(1)(a)(ii), or Article 325ba(2)(a) and associated with the scope of application of the relevant internal models to which the risk number refers.
2. In accordance with Article 325azx(1), an institution shall assess the impact of any change or extension as the highest absolute value over the period referred to in paragraph 3 of a ratio calculated as follows:
 - (a) for the purpose of paragraph 1(c)(i) of this Annex:
 - (i) in the numerator, the difference between the sum referred to in paragraph 1(c)(i) with and without the change or extension; and
 - (ii) in the denominator, the sum referred to in paragraph 1(c)(i) without the change or extension;
 - (b) for the purposes of paragraph 1(c)(ii) of this Annex:

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- (i) in the numerator, the difference between the risk number referred to in Article 325ba(1)(a)(i), Article 325ba(1)(a)(ii), or Article 325ba(2)(a) with and without the change or extension; and
 - (ii) in the denominator, the risk number referred to, respectively, in Article 325ba(1)(a)(i), Article 325ba(1)(a)(ii), or Article 325ba(2)(a) without the change or extension.
3. For the purposes of paragraph 1(c)(i) and 1(c)(ii) the ratios referred to in paragraph 2 shall be calculated for a period the duration of which is the shortest between:
 - (a) 15 consecutive *business days* starting from the first *business day* of the testing of the impact of the change or extension; and
 - (b) until such day where a daily calculation of either one of the ratios referred to in points (a) or (b) of paragraph 2 results in an impact equal or greater than the percentages referred to in point (i) or (ii) of paragraph 1(c), respectively.

Part B

Changes and Extensions that require prior notification to the PRA

1. For the purpose of Article 325azx(3), an institution must give prior notification to the PRA before implementing the following changes and extensions to the use of internal models:
 - (a) the inclusion in the scope of an internal model of product classes requiring other risk modelling techniques than those forming part of the permission to use that internal model, such as path-dependent products, or multi-underlying positions, according to Article 325bh;
 - (b) changes in the fundamentals of statistical methods referred to in the Market Risk: Internal Model Approach (CRR) Part, including but not limited to any of the following:
 - (i) reduction in the number of simulations;
 - (ii) introduction or removal of variance reduction methods;
 - (iii) changes to the algorithms to generate the random numbers;
 - (iv) changes in the statistical method to estimate volatilities or correlations between risk factors; or
 - (v) changes in the assumptions about the joint distribution of risk factors;
 - (c) changes in the effective length of the historical observation period, including a change in a weighting scheme of the time series according to point (c) of Article 325bc(4);
 - (d) changes in the approach for identifying the stressed period according to point (c) of Article 325bc(2);
 - (e) changes in the definition of market risk factors applied in the internal ES model, including migration to an OIS discounting framework, a move between zero rates, par rates or swap rates;
 - (f) changes in how shifts in market risk factors are translated into changes of the portfolio value, such as changes in instrument valuation models — used to calculate sensitivities to risk factors or to re-value positions when calculating risk numbers —, changes from analytical to simulation-based pricing model, changes between Taylor-approximation and full revaluation, or changes in the sensitivity measures applied, according to Article 325bh;
 - (g) changes in the methodology for defining proxies according to paragraphs 13 and 14 of Article 325bh;

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- (h) changes in the hierarchy of sources of ratings used for determining the rating of an individual position in the default risk model according to Section 3 of this Part;
- (i) changes in the methodology regarding the loss given default rate (LGD) or the liquidity horizons for default risk model according to Section 3 of this Part;
- (j) changes in the methodology used for assigning exposures to individual exposure classes in the default risk model according to Section 3 of Market Risk: Internal Model Approach (CRR) Part;
- (k) changes of methods for estimating exposure or asset correlation default risk model according to Section 3 of this Market Risk: Internal Model Approach (CRR) Part;
- (l) changes in the methodology for calculating either actual or hypothetical profit and loss when used for back-testing purposes according to Article 325bf;
- (m) changes in the internal validation methodology according to Article 325bj;
- (n) structural, organisational or operational changes to the core processes in risk management or risk controlling functions, according to Article 325bi including any of the following:
 - (i) senior staff changes;
 - (ii) the limit setting framework;
 - (iii) the reporting framework;
 - (iv) the stress testing methodology;
 - (v) the new product process;
 - (vi) the internal model change policy; or
- (o) changes in the IT environment, including any of the following:
 - (i) changes to the IT system, which result in amendments in the calculation procedure of the internal model;
 - (ii) applying vendor pricing models;
 - (iii) outsourcing of central data collection functions.

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Part C

Documentation required in respect of changes and extension permission applications and notifications

- 1 For the purposes of obtaining the permission from the *PRA* referred to in Article 325azx(1) for material changes or extensions to the use of internal models or material changes to the institution's choice of the subset of the modellable risk factors, an institution shall submit, together with the application, the following documentation:
 - (a) description of the extension or change, its rationale and objective;
 - (b) implementation date;
 - (c) scope of application affected by the model extension or change, with volume characteristics;
 - (d) technical and process document(s);
 - (e) reports of the institution's independent review or validation;
 - (f) confirmation that the extension or change has been approved through the institution's approval processes by the competent bodies and date of approval;
 - (g) where applicable, the quantitative impact of the change or extension on the risk weighted exposure amounts, or on the own funds requirements, or on the relevant risk numbers or sum of relevant own funds requirements and risk numbers; and
 - (h) records of the institution's current and previous version number of internal models which are subject to approval by the *PRA*.
2. Where institutions are required to calculate the quantitative impact of any extension or change on own funds requirements or, where applicable, on risk-weighted exposure amounts, they shall apply the following methodology:
 - (a) for the purpose of the assessment of the quantitative impact institutions shall use the most recent data available;
 - (b) where a precise assessment of the quantitative impact is not feasible, institutions shall instead perform an assessment of the impact based on a representative sample or other reliable inference methodologies; or
 - (c) for changes having no direct quantitative impact, no quantitative impact as laid down in paragraph 1 (c) of Part A of this Annex needs to be calculated.
3. For the purposes of notifying the *PRA* in accordance with paragraph 4 of Article 325azx for changes or extensions to the use of internal models or changes to the institution's choice of the subset of the modellable risk factors which are not material, institutions shall submit documentation referred to in points (a), (b), (c), (f) and (g) of Part C of this Annex.

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

Annex I

Market Risk: Advanced Standardised Approach (CRR) Part

In this Annex, the text is all new and is not underlined.

Part

MARKET RISK: ADVANCED STANDARDISED APPROACH (CRR)

Chapter content

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This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

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This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

1 APPLICATION AND DEFINITIONS

1.1 This Part applies to:

- (a) a *firm* that is a *CRR firm* but not an *ICR firm*; and
- (b) a *CRR consolidation entity* that is not an *ICR consolidation entity*.

1.2 In this Part, the following definitions shall apply:

ACTP CSR

means *CSR* for securitisation included in the *ACTP*.

CSR

means credit spread risk.

GIRR

means general interest rate risk.

non-ACTP CSR

means *CSR* for securitisation not included in the *ACTP*.

non-trading book position

means a position which is held by an institution and which is not held in the trading book.

2 LEVEL OF APPLICATION

Application of requirements on an individual basis

2.1 An institution shall comply with this Part on an individual basis.

[Note: Rule 2.1 sets out an equivalent provision to Article 6(1) of *CRR* that applies to this Part]

2.2 Where an institution has been given permission under Article 9(1) of *CRR* it shall incorporate relevant subsidiaries in the calculation undertaken to comply with rule 2.1.

[Note: Rule 2.2 applies Article 9(1) of *CRR* to this Part where a permission under that Article has been given]

Application of requirements on a consolidated basis

2.3 A *CRR consolidation entity* shall comply with this Part on the basis of its consolidated situation.

[Note: Rule 2.3 sets out an equivalent provision to the first sentence of Article 11(1) of *CRR* that applies to this Part]

2.4 For the purposes of applying this Part on a consolidated basis, the terms 'institution' and 'UK parent institution' shall include a *CRR consolidation entity* (if it would not otherwise have been included).

[Note: Rule 2.4 sets out an equivalent provision to the first sub-paragraph of Article 11(2) of *CRR* that applies to this Part]

2.5 The expression 'consolidated situation' applies for the purposes of this Part as it does for the purposes of Parts Two and Three of *CRR*.

[Note: The term 'consolidated situation' is defined in Article 4(1)(47) of *CRR*]

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

Application of requirements on a sub-consolidated basis

2.6 An institution that is required to comply with Parts Two and Three of *CRR* on a sub-consolidated basis, shall comply with this Part on the same basis.

[Note: This rule sets out Article 11(6) of *CRR* that it applies to this Part]

3 ORGANISATIONAL STRUCTURE AND CONTROL MECHANISMS

3.1 A *CRR consolidation entity* and an institution shall set up a proper organisational structure and appropriate internal control mechanisms in order to ensure that the data required for consolidation for the purposes of this Part are duly processed and forwarded.

[Note: Rule 3.1 sets out an equivalent provision to the second sentence of Article 11(1) of *CRR* that applies to this Part]

3.2 A *CRR consolidation entity* and an institution shall ensure that a subsidiary not subject to this Part implements arrangements, processes and mechanisms to ensure proper consolidation for the purposes of this Part.

[Note: Rule 3.2 sets out an equivalent provision to the third sentence of Article 11(1) of *CRR* that applies to this Part]

4 ADVANCED STANDARDISED APPROACH (PART THREE, TITLE IV, CHAPTER 1A CRR)

SECTION 1 GENERAL PROVISIONS

ARTICLE 325c SCOPE AND STRUCTURE OF THE ADVANCED STANDARDISED APPROACH

1. [Note: Provision left blank]
2. An institution shall calculate the own funds requirements for market risk in accordance with the advanced standardised approach for a portfolio of:
 - (i) trading book positions; or
 - (ii) *non-trading book positions* that are subject to foreign exchange or commodity risk, as the sum of the following three components:
 - (a) the own funds requirement under the sensitivities-based method set out in Section 2;
 - (b) the own funds requirement for residual risks set out in Section 4 which is only applicable to the trading book positions referred to in that Section; and
 - (c) the own funds requirement for the default risk set out in Section 5 which is only applicable to the trading book positions referred to in that Section.

[Note: Paragraph 2 of this rule corresponds to paragraph 2 of Article 325c of *CRR* as it applied immediately before revocation by the *Treasury*]

SECTION 2 SENSITIVITIES-BASED METHOD FOR CALCULATING THE OWN FUNDS REQUIREMENT

ARTICLE 325d DEFINITIONS

1. For the purposes of this Part, the following definitions apply:
 - (a) 'bucket' means a sub-category of positions within one risk class with a similar risk profile to which a risk factor as defined in Subsection 1 of Section 3 is assigned.

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

- (b) 'risk class' means one of the following seven categories:
- (i) *GIRR*;
 - (ii) *CSR* for non-securitisation;
 - (iii) *non-ACTP CSR*;
 - (iv) *ACTP CSR*;
 - (v) equity risk;
 - (vi) commodity risk; or
 - (vii) foreign exchange risk.
- (c) 'sensitivity' means the relative change in the value of a position, as a result of a change in the value of one of the relevant risk factors of the position, calculated using the institution's pricing model in accordance with Subsection 2 of Section 3.

[Note: This rule corresponds to Article 325d of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 325e COMPONENTS OF THE SENSITIVITIES-BASED METHOD

1. An institution shall calculate the own funds requirement for market risk under the sensitivities-based method by aggregating the following three own funds requirements in accordance with Article 325h:
- (a) own funds requirements for delta risk which capture the risk of changes in the value of an instrument due to movements in its non-volatility related risk factors;
 - (b) own funds requirements for vega risk which capture the risk of changes in the value of an instrument due to movements in its volatility-related risk factors; and
 - (c) own funds requirements for curvature risk which capture the risk of changes in the value of an instrument due to movements in the main non-volatility related risk factors not captured by the own funds requirements for delta risk.
2. For the purpose of the calculation referred to in paragraph 1:
- (a) all the positions of instruments with optionality shall be subject to the own funds requirements referred to in points (a), (b) and (c) of paragraph 1 for the risks other than exotic underlyings of the instruments as referred to in point (a) of Article 325u(2); and
 - (b) all the positions of instruments without optionality shall only be subject to the own funds requirements referred to in point (a) of paragraph 1 for the risks other than exotic underlyings of the instruments as referred to in point (a) of Article 325u(2).

For the purposes of this Part, instruments with optionality include, among others: calls, puts, caps, floors, swap options, barrier options, embedded options (such as prepayment or behavioural options) and exotic options.

For the purposes of this Part, instruments whose cash flows can be written as a linear function of the underlying's notional amount shall be considered to be instruments without optionality.

3. By way of derogation from point (b) of paragraph 2, an institution may with the prior permission of the *PRA* to the extent and subject to any modifications set out in the permission, subject all the positions of instruments without optionality to the own funds requirements referred to in point (c) of paragraph 1, in addition to the requirements referred to in point (a) of paragraph 1.

If an institution is granted permission by the *PRA* to apply the approach in the first subparagraph above, it may only cease applying such approach with the permission of the *PRA*.

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

[Note: This is a permission created under sections 144G(2) and 192XC of *FSMA* to which Part 8 of the *Capital Requirements Regulations* applies]

[Note: This rule corresponds to Article 325e of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 325f OWN FUNDS REQUIREMENTS FOR DELTA AND VEGA RISKS

1. An institution shall apply the delta and vega risk factors described in Subsection 1 of Section 3 to calculate the own funds requirements for delta and vega risks.
2. An institution shall apply the process set out in paragraphs 3 to 8 to calculate own funds requirements for delta and vega risks.
3. For each risk class, the sensitivity of all instruments in scope of the own funds requirements for delta or vega risks to each of the applicable delta or vega risk factors included in that risk class shall be calculated by using the corresponding formulas in Subsection 2 of Section 3. If the value of an instrument depends on several risk factors, the sensitivity shall be determined separately for each risk factor.
4. Sensitivities shall be assigned to one of the buckets 'b' within each risk class.
5. Within each bucket 'b', the positive and negative sensitivities to the same risk factor shall be netted, giving rise to net sensitivities (s_k) to each risk factor 'k' within a bucket.
6. The net sensitivities to each risk factor within each bucket shall be multiplied by the corresponding risk weights set out in Section 6, giving rise to weighted sensitivities to each risk factor within that bucket in accordance with the following formula:

$$WS_k = RW_k \cdot s_k$$

where:

WS_k = the weighted sensitivities;

RW_k = the risk weights;

s_k = the risk factor.

7. The weighted sensitivities to the different risk factors within each bucket shall be aggregated in accordance with the formula below, where the quantity within the square root function is floored at zero, giving rise to the bucket-specific sensitivity. The corresponding correlations for weighted sensitivities within the same bucket (ρ_{kl}), set out in Section 6, shall be used.

$$K_b = \sqrt{\sum_k WS_k^2 + \sum_k \sum_{l \neq k} \rho_{kl} WS_k WS_l}$$

where:

K_b = the bucket-specific sensitivity;

WS = the weighted sensitivities.

8. The bucket-specific sensitivity shall be calculated for each bucket within a risk class in accordance with paragraphs 5, 6 and 7. Once the bucket-specific sensitivity has been calculated for all buckets, weighted sensitivities to all risk factors across buckets shall be aggregated in accordance with the formula below, using the corresponding correlations γ_{bc} for weighted sensitivities in different buckets set out in Section 6, giving rise to the risk class-specific own funds requirement for delta or vega risk:

$$\text{Risk class-specific own fund requirement for delta or vega risk} = \sqrt{\sum_b K_b^2 + \sum_b \sum_{c \neq b} \gamma_{bc} S_b S_c}$$

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where:

$S_b = \sum_k WS_k$ for all risk factors in bucket b and $S_c = \sum_k WS_k$ in bucket c; where those values for S_b and S_c produce a negative number for the overall sum of $\sum_b K_b^2 + \sum_b \sum_{c \neq b} \gamma_{bc} S_b S_c$ the institution shall calculate the risk class-specific own funds requirements for delta or vega risk using an alternative specification whereby:

$$S_b = \max \left[\min \left(\sum_k WS_k, K_b \right), -K_b \right]$$

$$S_c = \max \left[\min \left(\sum_k WS_k, K_c \right), -K_c \right]$$

The risk class-specific own funds requirements for delta or vega risk shall be calculated for each risk class in accordance with paragraphs 1 to 8.

[Note: This rule corresponds to Article 325f of CRR as it applied immediately before revocation by the Treasury]

ARTICLE 325g OWN FUNDS REQUIREMENTS FOR CURVATURE RISK

1. An institution shall perform the calculations laid down in paragraph 2 for each risk factor of the instruments subject to the own funds requirement for curvature risk, except for the risk factors referred to in paragraph 3.

For a given risk factor, an institution shall perform those calculations on a net basis across all the positions of the instruments subject to the own funds requirement for curvature risk that contain that risk factor.

2. For a given risk factor k included in one or more instruments referred to in paragraph 1, an institution shall calculate the upward net curvature risk position of that risk factor (CVR_k^+) and the downward net curvature risk position of that risk factor (CVR_k^-) as follows:

$$CVR_k^+ = - \sum_i CVR_{ik}^+$$

$$CVR_k^- = - \sum_i CVR_{ik}^-$$

$$CVR_{ik}^+ = V_i \left(x_k^{RW(Curvature)^+} \right) - V_i(x_k) - RW_k^{Curvature} \times S_{ik}$$

$$CVR_{ik}^- = V_i \left(x_k^{RW(Curvature)^-} \right) - V_i(x_k) + RW_k^{Curvature} \times S_{ik}$$

where:

i = the index that denotes all the positions of instruments referred to in paragraph 1 and including risk factor k ;

x_k = the current value of risk factor k ;

$V_i(x_k)$ = the value of instrument i as estimated by the pricing model of the institution based on the current value of risk factor k ;

$V_i \left(x_k^{RW(Curvature)^+} \right)$ = the value of instrument i as estimated by the pricing model of the institution based on an upward shift of the value of risk factor k ;

$V_i \left(x_k^{RW(Curvature)^-} \right)$ = the value of instrument i as estimated by the pricing model of the institution based on a downward shift of the value of risk factor k ;

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$RW_k^{Curvature}$ = the risk weight applicable to risk factor k determined in accordance with Section 6;

s_{ik} = the delta sensitivity of instrument i with respect to risk factor k , calculated in accordance with Article 325r.

- By way of derogation from paragraph 2, for curves of risk factors that belong to the *GIRR*, *CSR* and commodity risk classes, an institution shall perform the calculations laid down in paragraph 6 at the level of the entire curve instead of at the level of each risk factor that belongs to the curve.

For the purposes of the calculation referred to in paragraph 2, where x_k is a curve of risk factors allocated to the *GIRR*, *CSR* and commodity risk classes, s_{ik} , shall be the sum of the delta sensitivities to the risk factor of the curve across all tenors of the curve.

- In order to determine a bucket-level own funds requirement for curvature risk, an institution shall aggregate, in accordance with the following formula the upward and downward net curvature risk positions, calculated in accordance with paragraph 2, of all the risk factors assigned to that bucket in accordance with Subsection 1 of Section 3:

$$K_b = \begin{cases} \max(K_b^+, K_b^-); \text{ where } K_b^+ \neq K_b^- \\ K_b^+; \text{ where } K_b^+ = K_b^- \text{ and } \sum_k CVR_k^+ > \sum_k CVR_k^- \\ K_b^-; \text{ otherwise} \end{cases}$$

where:

b = the index that denotes a bucket of a given risk class;

K_b = the own funds requirement for curvature risk for bucket b ;

$K_b^+ = \sqrt{\max(0, \sum_k \max(CVR_k^+, 0)^2 + \sum_{l \neq k} \sum_k \rho_{kl} CVR_k^+ CVR_l^+ \psi(CVR_k^+, CVR_l^+))}$;

$K_b^- = \sqrt{\max(0, \sum_k \max(CVR_k^-, 0)^2 + \sum_{l \neq k} \sum_k \rho_{kl} CVR_k^- CVR_l^- \psi(CVR_k^-, CVR_l^-))}$;

$\psi(x, y) = \begin{cases} 0; \text{ where } x < 0 \text{ and } y < 0 \\ 1; \text{ otherwise} \end{cases}$;

ρ_{kl} = the intra-bucket correlations between risk factors k and l as prescribed in Section 6;

k, l = the indices that denote all the risk factors k and l as included in one or more instruments referred to in paragraph 1;

CVR_k^+ = the upward net curvature risk position;

CVR_k^- = the downward net curvature risk position.

- By way of derogation from paragraph 4, for the bucket-level own funds requirements for curvature risk of bucket 16 of Table 4 in Article 325ah, of bucket 16 of Table 6 in Article 325ak, of bucket 25 of Table 7 in Article 325am and of bucket 11 of Table 8 in Article 325ap, an institution shall use the following formula:

$$K_b = \max\left(\sum_k \max(CVR_k^+, 0), \sum_k \max(CVR_k^-, 0)\right)$$

- An institution shall calculate the risk class own funds requirements for curvature risk by aggregating all the bucket-level own funds requirements for curvature risk within a given risk class as follows:

$$RCCR = \sqrt{\max\left(0, \sum_b K_b^2 + \sum_{c \neq b} \sum_b \gamma_{bc} S_b S_c \psi(S_b, S_c)\right)}$$

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where:

b, c = the indices that denote all the buckets of a given risk class that corresponds to instruments referred to in paragraph 1;

K_b = own funds requirements for curvature risk for bucket b ;

$$S_b = \begin{cases} \sum_k CVR_k^+; & \text{where } K_b = K_b^+ \text{ in accordance with paragraph 4} \\ \sum_k CVR_k^-; & \text{otherwise} \end{cases}$$

$$\psi(x, y) = \begin{cases} 0; & \text{where } x < 0 \text{ and } y < 0 \\ 1; & \text{otherwise} \end{cases}$$

γ_{bc} = the inter-bucket correlations between buckets b and c as set out in Section 6.

7. An institution must ensure the own funds requirement for curvature risk is the sum of the risk class own funds requirements for curvature risk calculated in accordance with paragraph 6 across all risk classes to which at least one risk factor of the instruments referred to in paragraph 1 belongs.

[Note: This rule corresponds to Article 325g of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 325h AGGREGATION OF RISK CLASS-SPECIFIC OWN FUNDS REQUIREMENTS FOR DELTA, VEGA AND CURVATURE RISKS

1. An institution shall aggregate risk class-specific own funds requirements for delta, vega and curvature risks in accordance with the process set out in paragraphs 2, 3 and 4.
2. The process to calculate the risk class-specific own funds requirements for delta, vega and curvature risks described in Articles 325f and 325g shall be performed three times per risk class, each time using a different set of correlation parameters ρ_{kl} (correlation between risk factors within a bucket) and γ_{bc} (correlation between buckets within a risk class). Each of those three sets shall correspond to a different scenario, as follows:
 - (a) the medium correlations scenario, whereby the correlation parameters ρ_{kl} and γ_{bc} remain unchanged from those specified in Section 6;
 - (b) the high correlations scenario, whereby the correlation parameters ρ_{kl} and γ_{bc} that are specified in Section 6 shall be uniformly multiplied by 1.25, with ρ_{kl} and γ_{bc} subject to a cap at 100%; and
 - (c) the low correlations scenario, whereby the correlation parameters $\rho_{kl}^{low} = \max(2 \cdot \rho_{kl} - 100\%, 75\% \cdot \rho_{kl})$ and $\gamma_{bc}^{low} = \max(2 \cdot \gamma_{bc} - 100\%, 75\% \cdot \gamma_{bc})$ respectively.
3. An institution shall calculate the sum of the delta, vega and curvature risk class-specific own funds requirements for each scenario to determine three scenario-specific own funds requirements.
4. The own funds requirement under the sensitivities-based method shall be the highest of the three scenario-specific own funds requirements referred to in paragraph 3.

[Note: This rule corresponds to Article 325h of *CRR* as it applied immediately before revocation by the *Treasury*]

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ARTICLE 325i TREATMENT OF INDEX INSTRUMENTS AND OTHER MULTI-UNDERLYING INSTRUMENTS

1. An institution shall use a look-through approach for index and other multi-underlying instruments in accordance with the following:
 - (a) for the purposes of calculating the own funds requirements for delta and curvature risk, an institution shall consider that they hold individual positions directly in the underlying constituents of the index or other multi-underlying instruments, except for a position in an index included in the *ACTP* for which they shall calculate a single sensitivity to the index;
 - (b) an institution may net the sensitivities to a risk factor of a given constituent of an index instrument or other multi-underlying instrument with the sensitivities to the same risk factor of the same constituent of single name instruments, except for positions included in the *ACTP*; and
 - (c) for the purposes of calculating the own funds requirements for vega risk, an institution may either consider that they directly hold individual positions in the underlying constituents of the index or other multi-underlying instrument, or calculate a single sensitivity to the underlying of that instrument. In the latter case, an institution shall assign the single sensitivity to the relevant bucket as set out in Subsection 1 of Section 6 as follows:
 - (i) where, taking into account the weightings of that index, more than 75% of constituents in that index would be mapped to the same bucket, an institution shall assign the sensitivity to that bucket and treat it as a single-name sensitivity in that bucket;
 - (ii) in all other cases, an institution shall assign the sensitivity to the relevant index bucket.
2. By way of derogation from point (a) of paragraph 1, an institution may calculate a single sensitivity to a position in a *listed* equity or credit index for the purposes of calculating the own funds requirements for delta and curvature risks provided the *listed* equity or credit index meets the conditions set out in paragraph 3. In that case, an institution shall assign the single sensitivity to the relevant bucket as set out in Subsection 1 of Section 6 as follows:
 - (a) where, taking into account the weightings of that *listed* index, more than 75% of constituents in that *listed* index would be mapped to the same bucket, that sensitivity shall be assigned to that bucket and treated as a single-name sensitivity in that bucket;
 - (b) in all other cases, an institution shall assign the sensitivity to the relevant *listed* index bucket.
3. An institution may use the approach set out in paragraph 2 for all instruments referencing a *listed* equity or credit index where all the following conditions are met:
 - (a) the constituents of the *listed* index and their respective weightings in that index are known;
 - (b) the *listed* index contains at least 20 constituents;
 - (c) no single constituent contained within the *listed* index represents more than 25% of the total market capitalisation of that index;
 - (d) no set comprising one tenth of the total number of constituents of the *listed* index, rounded up to the next integer, represents more than 60% of the total market capitalisation of that index; and
 - (e) the total market capitalisation of all the constituents of the *listed* index is no less than £32 billion.
4. An institution must exclusively use either:

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- (a) the approach set out in paragraph 1; or
- (b) the approach set out in paragraph 2,

for all instruments that reference the same *listed* equity or credit index that meets the conditions set out in paragraph 3. An institution which has used the approach set out in paragraph 1 for a type of instrument referencing a particular index may only with the prior permission of the *PRA* change to the approach set out in paragraph 2 to the approach set out in paragraph 1 in respect of such instruments to the extent and subject to any modifications set out in the permission.

[Note: This is a permission created under sections 144G(2) and 192XC of *FSMA* to which Part 8 of the *Capital Requirements Regulations* applies]

- 5. An institution must ensure that for an index or other multi-underlying instrument, the sensitivity inputs for the calculation of delta and curvature risks is consistent, irrespective of the approaches used for that instrument.
- 6. Index or multi-underlying instruments which bear other residual risks as referred to in paragraph 6 of Article 325u shall be subject to the residual risk add-on referred to in Section 4.

[Note: This rule corresponds to Article 325i of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 325j TREATMENT OF COLLECTIVE INVESTMENT UNDERTAKINGS

- 1. Subject to paragraph 6 below, an institution shall calculate the own funds requirements for market risk of a position in a CIU using one of the following approaches:
 - (a) where an institution is able to obtain sufficient information about the individual underlying exposures of the CIU, the institution shall calculate the own funds requirements for market risk of that CIU position by looking through to the underlying positions of the CIU as if those positions were directly held by the institution;
 - (b) where the institution is not able to obtain sufficient information about the individual underlying exposures of the CIU, but the institution has knowledge of the content of the mandate of the CIU and daily price quotes for the CIU can be obtained, the institution shall calculate the own funds requirements for market risk of that CIU position under the sensitivities-based method set out in Section 2 by using one of the following approaches:
 - (i) the institution may consider the position in the CIU as a single equity position allocated to the bucket 'other sector', being item 11 in Table 8 of paragraph 1 of Article 325ap;
 - (ii) with the prior permission of the *PRA* to the extent and subject to any modifications set out in the permission, an institution may calculate the own funds requirements for market risk of the CIU in accordance with the limits set in the CIU's mandate and relevant law;
 - (iii) in accordance with paragraph 4a, the institution may calculate the own funds requirements for market risk of the CIU on a stand-alone basis by treating the CIU as a single equity position and applying a risk weight calculated by a third party;
 - (c) where the institution does not meet the conditions in points (a) or (b), the institution shall allocate the CIU to the non-trading book.

[Note: This is a permission created under sections 144G(2) and 192XC of *FSMA* to which Part 8 of the *Capital Requirements Regulations* applies]

Where the mandate of the CIU implies that some exposures in the CIU shall be subject to the own funds requirement for default risk, an institution that uses one of the approaches set out in

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

point (b) shall apply the own funds requirement for default risk set out in Section 5 and the residual risk add-on set out in Section 4, provided that:

(1A) where an institution uses the approach set out in point (i) of point (b), that institution shall, for the purposes of determining any own funds requirement for default risk, consider the position in the CIU as a single unrated equity position allocated to the bucket 'Unrated' in Table 2 of paragraph 1 of Article 325y; and

(1B) where an institution uses the approach set out in point (iii) of point (b), that institution shall, for the purposes of determining the residual risk add-on and own funds requirement for default risk, apply separate risk weights calculated by a third party. An institution shall ensure that the third party provides separate calculations for non-securitisations, securitisations that are not included in the *ACTP* and securitisations that are included in the *ACTP*.

An institution that uses the approach set out in point (ii) of point (b) may calculate the own funds requirements for counterparty credit risk and own funds requirements for *CVA risk* of derivative positions of the CIU, using the simplified approach set out in paragraph 3 of Credit Risk: Standardised Approach (CRR) Part Article 132a.

2. By way of derogation from paragraph 1, where an institution has a position in a CIU that tracks an index benchmark so that the annualised return difference between the CIU and the tracked index benchmark over the last 12 months is below 1% in absolute terms, ignoring fees and commissions, the institution may treat that position as a position in the tracked index benchmark. An institution shall verify compliance with that condition when the institution enters into the position and, after that, at least annually.

For the purposes of the first sub-paragraph above, where data over the last 12 months cannot as yet be obtained, an institution may use an annualised return difference for a period shorter than 12 months.

3. An institution may use a combination of the approaches referred to in points (a), (b) and (c) of paragraph 1 for its positions in separate CIUs. However, an institution shall use only one of those approaches for all the positions in the same CIU.
4. For the purposes of point (ii) of paragraph 1(b) and where point (ii) of paragraph 1(b) applies as the mandate of the CIU implies that some exposures in the CIU shall be subject to the own funds requirement for default risk in accordance with the second sub-paragraph of paragraph 1, an institution shall carry out the calculations under the following provisions:
 - (a) for the purposes of calculating the own funds requirement under the sensitivities-based method set out in Section 2, the CIU shall first take position to the maximum extent allowed under its mandate or relevant law in the exposures attracting the highest own funds requirements set out under that Section and shall then continue taking positions in descending order until the maximum total loss limit is reached;
 - (b) for the purposes of the own fund requirements for the default risk set out in Section 5, the CIU shall first take position to the maximum extent allowed under its mandate or relevant law in the exposures attracting the highest own funds requirements set out under that Section and shall then continue taking positions in descending order until the maximum total loss limit is reached; and
 - (c) the CIU shall apply leverage to the maximum extent allowed under its mandate or relevant law, where applicable.

The own funds requirements for all positions in the same CIU for which the calculations referred to in the first subparagraph are used shall be calculated on a stand-alone basis as a separate portfolio using the approach set out in this Part.

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- 4a. An institution may apply the treatment in point (iii) of paragraph 1(b) where conditions (a), (b) and (c) are met and may apply the treatment in point (1B) of paragraph 1 where conditions (b) and (c) are met. The conditions are:
- (a) the risk weight is determined as the own funds requirements of the CIU calculated on a stand-alone basis in accordance with point (a) of paragraph 1, divided by the delta sensitivity that would be determined if treating the position in the CIU as a single equity position in accordance with point (i) of point (b) of paragraph 1;
 - (b) an external auditor has confirmed the adequacy of the third party's calculation of the risk weight, including that the third party has adequate information to perform the calculation in point (a) of this paragraph; and
 - (c) the institution verifies the appropriateness of the third party's risk weight calculation.
5. An institution may use the approaches referred to in point (a) or (b) of paragraph 1 only where the CIU meets all the conditions set out in paragraph 3 of Credit Risk: Standardised Approach (CRR) Part Article 132.
6. An institution shall treat a position in a CIU which is also a closed-ended investment fund with a premium listing in compliance with the listing rules as an equity position in accordance with this Part. For the purposes of this paragraph, the terms 'closed-ended investment fund', 'premium listing' and 'listing rules' shall have the meaning given to such terms in the FCA Handbook.

[Note: This rule corresponds to Article 325j of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 325k UNDERWRITING PROVISIONS

[Note: Provision left blank]

SECTION 3 RISK FACTOR AND SENSITIVITY DEFINITIONS

SUBSECTION 1 RISK FACTOR DEFINITIONS

ARTICLE 325l GENERAL INTEREST RATE RISK FACTORS

1. An institution shall ensure that for all *GIRR* factors, including inflation risk and cross-currency basis risk, there shall be one bucket per currency, each containing different types of risk factor.
- An institution shall ensure that the delta *GIRR* factors applicable to interest rate-sensitive instruments shall be the relevant risk-free rates per currency and per each of the following maturities: 0.25 years, 0.5 years, one year, two years, three years, five years, 10 years, 15 years, 20 years, 30 years. An institution shall assign risk factors to the specified vertices by linear interpolation or by using a method that is most consistent with the pricing functions used by the independent risk control function of the institution to report market risk or profits and losses to *senior management*.
2. An institution shall obtain the risk-free rates per currency from *money-market instruments* held in the trading book of the institution that have the lowest credit risk, such as overnight index swaps.
3. Where an institution cannot apply the approach referred to in paragraph 2, the risk-free rates shall be based on one or more market-implied swap curves used by the institution to mark positions to market, such as the interbank offered rate swap curves.

Where the data on market-implied swap curves described in paragraph 2 and the first subparagraph of this paragraph are insufficient, the risk-free rates may be derived from the most appropriate sovereign bond curve for a given currency.

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

Where an institution uses the *GIRR* factors derived in accordance with the procedure set out in the second subparagraph of this paragraph for sovereign debt instruments, the sovereign debt instrument shall not be exempted from the own funds requirements for *CSR*. In those cases, where it is not possible to disentangle the risk-free rate from the credit spread component, the sensitivity to the risk factor shall be allocated both to the *GIRR* and to *CSR* classes.

For the purpose of constructing the risk-free rates per currency:

- (a) an overnight index swap curve (such as Eonia or a new benchmark rate) and a bank offering rate swap curve (such as three-month Euribor or other benchmark rates) must be considered two different curves;
 - (b) two bank offering rate curves at different maturities (such as three-month Euribor and six-month Euribor) must be considered two different curves; and
 - (c) an onshore and an offshore currency curve (such as onshore Indian rupee and offshore Indian rupee) must be considered two different curves.
4. An institution shall ensure that in the case of *GIRR* factors, each currency constitutes a separate bucket. An institution shall assign risk factors within the same bucket, but with different maturities a different risk weight in accordance with Section 6.

An institution shall apply additional risk factors for inflation risk to debt instruments whose cash flows are functionally dependent on inflation rates. Those additional risk factors shall consist of one vector of market implied inflation rates of different maturities per inflation curve in a given currency. For each instrument, the vector shall contain as many components as there are inflation rates used as variables by the institution's pricing model for that instrument.

5. An institution shall calculate the sensitivity of the instrument to the additional risk factor for inflation risk referred to in paragraph 4 as the change in the value of the instrument, according to its pricing model, as a result of a one basis point shift in each of the components of the vector. Each currency shall constitute a separate bucket. Within each bucket, an institution shall treat each inflation curve as a single risk factor, regardless of the number of components of each vector. An institution shall offset all sensitivities to a single inflation curve within a bucket, calculated as described in this paragraph, in order to give rise to a single net sensitivity per inflation curve.
6. Debt instruments that involve payments in different currencies shall also be subject to cross-currency basis risk between those currencies. For the purposes of the sensitivities-based method, an institution shall apply risk factors which are the cross-currency basis risk of each currency over either US dollar or euro. An institution shall compute cross currency bases that do not relate to either basis over US dollar or basis over euro either on 'basis over US dollar' or 'basis over euro'.

Each cross-currency basis risk factor shall consist of one vector of cross-currency basis of different maturities per currency. For each debt instrument, the vector shall contain as many components as there are cross-currency bases used as variables by the institution's pricing model for that instrument. Each currency shall constitute a different bucket.

An institution shall calculate the sensitivity of the instrument to the cross-currency basis risk factor as the change in the value of the instrument, according to its pricing model, as a result of a one basis point shift in each of the components of the vector. Each currency shall constitute a separate bucket. Within each bucket there shall be two possible distinct risk factors: basis over euro and basis over US dollar, regardless of the number of components there are in each cross-currency basis vector. The maximum number of net sensitivities per bucket shall be two.

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7. The vega *GIRR* factors applicable to options with underlyings that are sensitive to general interest rate shall be the implied volatilities of the relevant risk-free rates as described in paragraphs 2 and 3, defined along two dimensions:
 - (a) the residual maturity of the option, mapped to one or several of the following tenors: 0.5 years, one year, three years, five years, 10 years; and
 - (b) the residual maturity of the underlying at the expiry date of the option, mapped to one or more of the following residual maturity tenors: 0.5 years, one year, three years, five years, 10 years.

Each vega *GIRR* factor shall be assigned to buckets depending on the currency, with one bucket per currency.

8. An institution shall apply curvature *GIRR* factors which consist of one vector of risk-free rates, representing a specific risk-free yield curve, per currency. Each currency shall constitute a different bucket. For each instrument, the vector shall contain as many components as there are different maturities of risk-free rates used as variables by the institution's pricing model for that instrument.
9. An institution shall calculate the sensitivity of the instrument to each risk factor used in the curvature risk formula in accordance with Article 325g. For the purposes of the curvature risk, an institution shall consider vectors corresponding to different yield curves and with a different number of components as the same risk factor, provided that those vectors correspond to the same currency. An institution shall offset sensitivities to the same risk factor. There shall be only one net sensitivity per bucket.

There shall be no curvature risk own funds requirements for inflation and cross currency basis risks.

[Note: This rule corresponds to Article 325l of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 325m CREDIT SPREAD RISK FACTORS FOR NON-SECURITISATION

1. An institution shall apply delta *CSR* factors to non-securitisation instruments that are sensitive to credit spread which are the *issuer* credit spread rates of those instruments, inferred from the relevant debt instruments and credit default swaps, and mapped to each of the following maturities: 0.5 years, one year, three years, five years, 10 years.

An institution shall identify two distinct risk factors per *issuer* and maturity: one risk factor for debt instruments and one risk factor for credit default swaps. The buckets shall be sector buckets, as referred to in Section 6, and each bucket shall include all the risk factors allocated to the relevant sector.
2. An institution shall apply vega *CSR* factors to options with non-securitisation underlyings that are sensitive to credit spread which are the implied volatilities of the underlyings' *issuer* credit spread rates inferred as laid down in paragraph 1, which shall be mapped to the following maturities in accordance with the maturity of the option subject to own funds requirements: 0.5 years, one year, three years, five years, 10 years. The same buckets shall be used as the buckets that were used for the delta *CSR* for non-securitisation.
3. An institution shall apply curvature *CSR* factors to non-securitisation instruments which consist of one vector of credit spread rates, representing a credit spread curve specific to the *issuer*. For each instrument, the vector shall contain as many components as there are different maturities of credit spread rates used as variables in the institution's pricing model for that instrument. The same buckets shall be used as the buckets that were used for the delta *CSR* for non-securitisation.

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

4. An institution shall calculate the sensitivity of the instrument to each risk factor used in the curvature risk formula in accordance with Article 325g. For the purposes of the curvature risk, an institution shall consider vectors inferred from either relevant debt instruments or credit default swaps and with a different number of components as the same risk factor, provided that those vectors correspond to the same *issuer*.

[Note: This rule corresponds to Article 325m of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 325n CREDIT SPREAD RISK FACTORS FOR SECURITISATION

1. An institution shall apply the *CSR* factors referred to in paragraph 3 to securitisation positions that are included in the *ACTP*, as referred to in paragraphs 6, 7 and 8 of Market Risk: General Provisions (*CRR*) Part Article 325.

An institution shall apply the *CSR* factors referred to in paragraph 5 to securitisation positions that are not included in the *ACTP*, as referred to in paragraphs 6, 7 and 8 of Market Risk: General Provisions (*CRR*) Part Article 325.

2. The buckets applicable to the *CSR* for securitisations that are included in the *ACTP* shall be the same as the buckets applicable to the *CSR* for non-securitisations, as referred to in Section 6.

The buckets applicable to the *CSR* for securitisations that are not included in the *ACTP* shall be specific to that risk class category, as referred to in Section 6.

3. An institution shall apply *CSR* factors to securitisation positions that are included in the *ACTP* as follows:

- (a) the delta risk factors shall be all the relevant credit spread rates of the *issuers* of the underlying exposures of the securitisation position, inferred from the relevant debt instruments and credit default swaps, and for each of the following maturities: 0.5 years, one year, three years, five years, 10 years.
- (b) the vega risk factors applicable to options with securitisation positions that are included in the *ACTP* as underlyings shall be the implied volatilities of the credit spreads of the *issuers* of the underlying exposures of the securitisation position, inferred as described in point (a) of this paragraph, which shall be mapped to the following maturities in accordance with the maturity of the corresponding option subject to own funds requirements: 0.5 years, one year, three years, five years, 10 years; and
- (c) the curvature risk factors shall be the relevant credit spread yield curves of the *issuers* of the underlying exposures of the securitisation position expressed as a vector of credit spread rates for different maturities, inferred as indicated in point (a) of this paragraph; for each instrument, the vector shall contain as many components as there are different maturities of credit spread rates that are used as variables by the institution's pricing model for that instrument.

4. An institution shall calculate the sensitivity of the securitisation position to each risk factor used in the curvature risk formula as specified in Article 325g. For the purposes of the curvature risk, an institution shall consider vectors inferred either from relevant debt instruments or credit default swaps and with a different number of components as the same risk factor, provided that those vectors correspond to the same *issuer*.

5. An institution shall apply *CSR* factors to securitisation positions that are not included in the *ACTP* which refer to the spread of the tranche rather than the spread of the underlying instruments as follows:

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

- (a) the delta risk factors shall be the relevant tranche credit spread rates, mapped to the following maturities, in accordance with the maturity of the tranche: 0.5 years, one year, three years, five years, 10 years;
- (b) the vega risk factors applicable to options with securitisation positions that are not included in the *ACTP* as underlyings shall be the implied volatilities of the credit spreads of the tranches, each of them mapped to the following maturities in accordance with the maturity of the option subject to own funds requirements: 0.5 years, one year, three years, five years, 10 years; and
- (c) the curvature risk factors shall be the same as those described in point (a) of this paragraph; to all those risk factors, a common risk weight shall be applied, as referred to in Section 6.

[Note: This rule corresponds to Article 325n of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 325o EQUITY RISK FACTORS

1. The buckets for all equity risk factors shall be the sector buckets referred to in Section 6.
2. An institution shall apply equity delta risk factors which shall be all the equity spot prices and all equity *repo* rates.

For the purposes of equity risk, a specific equity *repo* curve shall constitute a single risk factor, which is expressed as a vector of *repo* rates for different maturities. For each instrument, the vector shall contain as many components as there are different maturities of *repo* rates that are used as variables by the institution's pricing model for that instrument.

An institution shall calculate the sensitivity of an instrument to an equity risk factor as the change in the value of the instrument, according to its pricing model, as a result of a one basis point shift in each of the components of the vector. An institution shall offset sensitivities to the *repo* rate risk factor of the same equity security, regardless of the number of components of each vector.

3. An institution shall apply equity vega risk factors to options with underlyings that are sensitive to equity which shall be the implied volatilities of equity spot prices which shall be mapped to the following maturities in accordance with the maturities of the corresponding options subject to own funds requirements: 0.5 years, one year, three years, five years, 10 years. There shall be no own funds requirements for vega risk for equity *repo* rates.
4. An institution shall apply equity curvature risk factors to options with underlyings that are sensitive to equity which shall be all the equity spot prices, regardless of the maturity of the corresponding options. There shall be no curvature risk own funds requirements for equity *repo* rates.

[Note: This rule corresponds to Article 325o of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 325p COMMODITY RISK FACTORS

1. The buckets for all commodity risk factors shall be the sector buckets referred to in Section 6.
2. An institution shall apply commodity delta risk factors to commodity sensitive instruments which shall be all the commodity spot prices per commodity type and per each of the following maturities: 0 years, 0.25 years, 0.5 years, one year, two years, three years, five years, 10 years, 15 years, 20 years, 30 years. An institution shall only consider two commodity prices of the same type of commodity, and with the same maturity to constitute the same risk factor where the set of legal terms regarding the delivery location are identical.

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

3. An institution shall apply commodity vega risk factors to options with underlyings that are sensitive to commodity which shall be the implied volatilities of commodity prices per commodity type, which shall be mapped to the following maturities in accordance with the maturities of the corresponding options subject to own funds requirements: 0.5 years, one year, three years, five years, 10 years. An institution shall consider sensitivities to the same commodity type and allocated to the same maturity to be a single risk factor which the institution shall then offset.
4. An institution shall apply commodity curvature risk factors to options with underlyings that are sensitive to commodity which shall be one set of commodity prices with different maturities per commodity type, expressed as a vector. For each instrument, the vector shall contain as many components as there are prices of that commodity that are used as variables by the institution's pricing model for that instrument. An institution shall not differentiate between commodity prices by delivery location.

An institution shall calculate the sensitivity of the instrument to each risk factor used in the curvature risk formula as specified in Article 325g. For the purposes of curvature risk, an institution shall consider vectors having a different number of components to constitute the same risk factor, provided that those vectors correspond to the same commodity type.

[Note: This rule corresponds to Article 325p of CRR as it applied immediately before revocation by the Treasury]

ARTICLE 325q FOREIGN EXCHANGE RISK FACTORS

1. An institution shall apply foreign exchange delta risk factors to foreign exchange sensitive instruments which shall be all the spot exchange rates between:
 - (a) the currencies either referenced by an instrument or in which an instrument is denominated; and
 - (b) the institution's reporting currency or the institution's base currency, where the institution is using a base currency in accordance with paragraph 7.

There shall be one bucket per currency pair, containing a single risk factor and a single net sensitivity.

2. An institution shall apply foreign exchange vega risk factors to options with underlyings that are sensitive to foreign exchange which shall be the implied volatilities of exchange rates between all applicable currency pairs. Those implied volatilities of exchange rates shall be mapped to the following maturities in accordance with the maturities of the corresponding options subject to own funds requirements: 0.5 years, one year, three years, five years, 10 years. There shall be one bucket per currency pair.
3. An institution shall apply foreign exchange curvature risk factors to instruments with underlyings that are sensitive to foreign exchange which shall be the foreign exchange delta risk factors referred to in paragraph 1.
4. An institution shall not be required to distinguish between onshore and offshore variants of a currency for all foreign exchange delta, vega and curvature risk factors.
5. Where a foreign exchange rate that is the underlying of an instrument i that is subject to own funds requirements for curvature risks neither refers to the institution's reporting currency nor the institution's base currency (if the institution has an approved base currency in accordance with paragraph 7), the institution may divide by 1.5 the corresponding components CVR_{ik}^- and CVR_{ik}^+ set out in paragraph 2 of Article 325g for which x_k is the foreign exchange risk factor between one of the two currencies of the underlying and the institution's reporting currency or the institution's base currency, as applicable.

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

6. An institution may with the prior permission of the *PRA* divide by 1.5 the components CVR_{ik}^- and CVR_{ik}^+ set out in paragraph 2 of Article 325g for all the foreign exchange risk factors of instruments concerning foreign exchange and subject to own funds requirement for curvature risk to the extent and subject to any modifications set out in the permission if, on applying for such permission, it is able to demonstrate to the satisfaction of the *PRA* that the institution calculates an additional set of curvature sensitivities for all foreign exchange risk factors under the assumption that the institution's reporting currency or the institution's base currency (if that institution has an approved base currency in accordance with paragraph 7), as applicable, simultaneously appreciates or depreciates against all other currencies. Those additional sensitivities shall be allocated to a single separate bucket.

An institution that has been granted the permission set out in the first sub-paragraph shall comply with the requirements set out in that first sub-paragraph.

[Note: This is a permission created under sections 144G(2) and 192XC of *FSMA* to which Part 8 of the *Capital Requirements Regulations* applies]

7. By way of derogation from paragraphs 1 and 3, an institution may with the prior permission of the *PRA* replace its reporting currency by another currency ('the base currency') in all the spot exchange rates to express the delta and curvature foreign exchange risk factors to the extent and subject to any modifications set out in the permission if, on applying for such permission, it is able to demonstrate to the satisfaction of the *PRA* that:

- (a) it only uses one base currency;
- (b) it applies the base currency consistently to all its trading book positions and *non-trading book positions*;
- (c) its choice of base currency:
 - (i) provides an appropriate risk representation for the institution's positions subject to foreign exchange risks;
 - (ii) is compatible with the manner in which the institution manages those foreign exchange risks internally; and
 - (iii) is not driven primarily by the desire to reduce the institution's own funds requirements; and
- (d) it takes into account the translation risk between the reporting currency and the base currency.

An institution that has been permitted to use a base currency as set out in the first subparagraph shall:

- (i) convert the resulting own funds requirements for foreign exchange risk into the reporting currency using the prevailing spot exchange rate between the base currency and the reporting currency; and
- (ii) comply with the requirements set out in limbs (a) to (d) above.

[Note: This is a permission created under sections 144G(2) and 192XC of *FSMA* to which Part 8 of the *Capital Requirements Regulation* applies]

[Note: Paragraphs 1 to 4 of this rule correspond to paragraphs 1 to 4 of Article 325q of *CRR* as applied immediately before revocation by the *Treasury*]

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

SUBSECTION 2 SENSITIVITY DEFINITIONS

ARTICLE 325r DELTA RISK SENSITIVITIES

1. An institution shall calculate delta *GIRR* sensitivities as follows:

(a) the sensitivities to risk factors consisting of risk-free rates shall be calculated as follows:

$$S_{rkt} = \frac{V_i(r_{kt} + 0.0001, x, y \dots) - V_i(r_{kt}, x, y \dots)}{0.0001}$$

where:

S_{rkt} = the sensitivities to risk factors consisting of risk-free rates;

r_{kt} = the rate of a risk-free curve k with maturity t ;

$V_i(\cdot)$ = the pricing function of instrument i ;

x, y = risk factors other than r_{kt} in the pricing function V_i ;

(b) the sensitivities to risk factors consisting of inflation risk and cross-currency basis shall be calculated as follows:

$$S_{xj} = \frac{V_i(X_{ji} + 0.0001, I_m, y, z \dots) - V_i(X_{ji}, y, z \dots)}{0.0001}$$

where:

S_{xj} = the sensitivities to risk factors consisting of inflation risk and cross-currency basis;

X_{ji} = a vector of m components representing the implied inflation curve or the cross-currency basis curve for a given currency j with m being equal to the number of inflation or cross-currency related variables used in the pricing model of instrument i ;

I_m = the unity matrix of dimension $(1 \cdot m)$;

$V_i(\cdot)$ = the pricing function of the instrument i ;

y, z = other variables in the pricing model.

2. An institution shall calculate the delta *CSR* sensitivities for all securitisation and non-securitisation positions as follows:

$$S_{CSkt} = \frac{V_i(CS_{kt} + 0.0001, x, y \dots) - V_i(CS_{kt}, x, y \dots)}{0.0001}$$

where:

S_{CSkt} = the delta *CSR* sensitivities for all securitisation and non-securitisation positions;

CS_{kt} = the value of the credit spread of an *issuer* k at maturity t ;

$V_i(\cdot)$ = the pricing function of instrument i ;

x, y = risk factors other than CS_{kt} in the pricing function V_i .

3. An institution shall calculate delta equity risk sensitivities as follows:

(a) the sensitivities to risk factors consisting of equity spot prices shall be calculated as follows:

$$S_k = \frac{V_i(1.01, EQ_k, x, y \dots) - V_i(EQ_k, x, y \dots)}{0.01}$$

where:

S_k = the sensitivities to risk factors consisting of equity spot prices;

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k = a specific equity security;

EQ_k = the value of the spot price of that equity security;

$V_i(\cdot)$ = the pricing function of instrument i ;

x, y = risk factors other than EQ_k in the pricing function V_i ;

(b) the sensitivities to risk factors consisting of equity *repo* rates shall be calculated as follows:

$$S_{x_k} = \frac{V_i(X_{ki} + 0.0001I_m, y, z \dots) - V_i(X_{ji}, y, z \dots)}{0.0001}$$

where:

S_{x_k} = the sensitivities to risk factors consisting of equity *repo* rates;

k = the index that denotes the equity;

X_{ki} = a vector of m components representing the *repo* term structure for a specific equity k with m being equal to the number of *repo* rates corresponding to different maturities used in the pricing model of instrument i ;

I_m = the unity matrix of dimension $(1 \cdot m)$;

$V_i(\cdot)$ = the pricing function of the instrument i ;

y, z = risk factors other than X_{ki} in the pricing function V_i .

4. An institution shall calculate the delta commodity risk sensitivities to each risk factor k as follows:

$$S_k = \frac{V_i(1.01CTY_k, y, z \dots) - V_i(CTY_k, y, z \dots)}{0.01}$$

where:

S_k = the delta commodity risk sensitivities;

k = a given commodity risk factor;

CTY_k = the value of risk factor k ;

$V_i(\cdot)$ = the pricing function of instrument i ;

y, z = risk factors other than CTY_k in the pricing model of instrument i .

5. An institution shall calculate the delta foreign exchange risk sensitivities to each foreign exchange risk factor k as follows:

$$S_k = \frac{V_i(1.01FX_k, y, z \dots) - V_i(FX_k, y, z \dots)}{0.01}$$

where:

S_k = the delta foreign exchange risk sensitivities;

k = a given foreign exchange risk factor;

FX_k = the value of the risk factor;

$V_i(\cdot)$ = the pricing function of instrument i ;

y, z = risk factors other than FX_k in the pricing model of instrument i .

[Note: This rule corresponds to Article 325r of *CRR* as it applied immediately before revocation by the *Treasury*]

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

ARTICLE 325s VEGA RISK SENSITIVITIES

1. An institution shall calculate the vega risk sensitivity of an option to a given risk factor k as follows:

$$S_k = \frac{V_i(0.01 + vol_k, x, y) - V_i(vol_k, x, y)}{0.01} \cdot vol_k$$

where:

S_k = the vega risk sensitivity of an option;

k = a specific vega risk factor, consisting of an implied volatility;

vol_k = the value of that risk factor, which should be expressed as a percentage;

x, y = risk factors other than vol_k in the pricing function V_i .

2. In the case of risk classes where vega risk factors have a maturity dimension, but where the rules to map the risk factors are not applicable because the options do not have a maturity, an institution shall map those risk factors to the longest prescribed maturity. An institution shall subject those options to the residual risks add-on.
3. In the case of options that do not have a strike or barrier and options that have multiple strikes or barriers, an institution shall apply the mapping to strikes and maturity used internally by the institution to price the option. An institution shall also subject those options to the residual risks add-on.
4. An institution shall not calculate the vega risk for securitisation tranches included in the *ACTP*, as referred to in paragraphs 6, 7 and 8 of Market Risk: General Provisions (CRR) Part Article 325, that do not have an implied volatility. An institution shall compute own funds requirements for delta and curvature risk for those securitisation tranches.

[Note: This rule corresponds to Article 325s of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 325t REQUIREMENTS ON SENSITIVITY COMPUTATIONS

1. An institution shall derive sensitivities from the institution's pricing models that serve as a basis for reporting profit and loss to *senior management*, using the formulas set out in this Subsection.
2. When calculating delta risk sensitivities of instruments with optionality as referred to in point (a) of Article 325e(2), an institution may assume that the implied volatility risk factors remain constant.
3. When calculating vega risk sensitivities of instruments with optionality as referred to in point (b) of Article 325e(2), the following requirements shall apply:
 - (a) for *GIRR* and *CSR*, an institution shall assume, for each currency, that the underlying of the volatility risk factors for which vega risk is calculated follows either a lognormal or normal distribution in the pricing models used for those instruments;
 - (b) for equity risk, commodity risk and foreign exchange risk, an institution shall assume that the underlying of the volatility risk factors for which vega risk is calculated follows a lognormal distribution in the pricing models used for those instruments.
4. An institution shall calculate all sensitivities except for the sensitivities to *CVAs*.
5. By way of derogation from paragraph 1, an institution may with the prior permission of the *PRA* use alternative definitions of delta risk sensitivities in the calculation of the own funds requirements of a trading book position under this Part to the extent and subject to any

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modifications set out in the permission if, on applying for such permission, it is able to demonstrate to the satisfaction of the *PRA* that:

- (a) those alternative definitions are used for internal risk management purposes and for the reporting of profits and losses to *senior management* by an independent risk control unit within the institution; and
- (b) those alternative definitions are more appropriate for capturing the sensitivities for the position than are the formulas set out in this Subsection, and that the resulting sensitivities do not materially differ from those formulas.

An institution that has been granted the permission set out in the first sub-paragraph shall comply with the requirements set out in that first sub-paragraph.

[Note: This is a permission created under sections 144G(2) and 192XC of *FSMA* to which Part 8 of the *Capital Requirements Regulations* applies]

6. By way of derogation from paragraph 1, an institution may with the prior permission of the *PRA* calculate vega sensitivities on the basis of a linear transformation of alternative definitions of sensitivities in the calculation of the own funds requirements of a trading book position under this Part to the extent and subject to any modifications set out in the permission if, on applying for such permission, it is able to demonstrate to the satisfaction of the *PRA* that:

- (a) those alternative definitions are used for internal risk management purposes and for the reporting of profits and losses to *senior management* by an independent risk control unit within the institution; and
- (b) those alternative definitions are more appropriate for capturing the sensitivities for the position than are the formulas set out in this Subsection, and that the linear transformation referred to in the first subparagraph reflects a vega risk sensitivity.

An institution that has been granted the permission set out in the first sub-paragraph shall comply with the requirements set out in that first sub-paragraph.

[Note: This is a permission created under sections 144G(2) and 192XC of *FSMA* to which Part 8 of the *Capital Requirements Regulations* applies]

[Note: This rule corresponds to Article 325t of *CRR* as it applied immediately before revocation by the *Treasury*]

SECTION 4 THE RESIDUAL RISK ADD-ON

ARTICLE 325u OWN FUNDS REQUIREMENTS FOR RESIDUAL RISKS

1. In addition to the own funds requirements for market risk set out in Section 2, an institution shall apply additional own funds requirements to instruments exposed to residual risks in accordance with this Article.
2. Instruments are considered to be exposed to residual risks where they meet any of the following conditions:
 - (a) the instrument is an instrument bearing residual risks where the instrument references an exotic underlying, which, for the purposes of this Part, means a trading book instrument referencing an underlying exposure that is not in the scope of the delta, vega or curvature risk treatments under the sensitivities-based method laid down in Section 2 or the own funds requirements for the default risk set out in Section 5;
 - (b) the instrument is an instrument bearing other residual risks, which, for the purposes of this Part, means any of the following instruments:

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- (i) instruments that are subject to the own funds requirements for vega and curvature risk under the sensitivities-based method set out in Section 2 and that generate pay-offs that cannot be replicated as a finite linear combination of plain-vanilla options with a single underlying equity price, commodity price, exchange rate, bond price, credit default swap price or interest rate swap;
 - (ii) instruments that are positions that are included in the *ACTP* referred to in paragraph 6 of Market Risk: General Provisions (CRR) Part Article 325; but
 - (iii) excluding hedges that are included in that *ACTP*, as referred to in paragraph 8 of Market Risk: General Provisions (CRR) Part Article 325.
3. An institution shall calculate the additional own funds requirements referred to in paragraph 1 as the sum of gross notional amounts of the instruments referred to in paragraph 2, multiplied by the following risk weights:
 - (a) 1% in the case of instruments referred to in point (a) of paragraph 2; and
 - (b) 0.1% in the case of instruments referred to in point (b) of paragraph 2.
4. By way of derogation from paragraph 1, an institution shall not apply the own funds requirement for other residual risks (as determined in accordance with sub-paragraph (b) of paragraph 2 above) to an instrument that meets any of the following conditions:
 - (a) the instrument is *listed* on a recognised exchange; or
 - (b) the instrument is eligible for central clearing in accordance with Regulation (EU) No 648/2012.
- 4a. By way of derogation from paragraph 1, an institution shall not apply the own funds requirement for residual risks (as determined in accordance with sub-paragraphs (a) and (b) of paragraph 2 above) to an instrument where the instrument perfectly offsets the market risk of another position in the trading book, provided that such position is with a third party.
5. For the purposes of point (a) in paragraph 2, an exotic underlying shall include, without limitation, the following underlyings:
 - (a) longevity;
 - (b) weather;
 - (c) natural disasters; and
 - (d) future realised volatility.
6. For the purposes of point (b) of paragraph 2, instruments bearing other residual risks shall include, without limitation, the following instruments:
 - (a) path-dependent options, which for the purpose of point (b) of paragraph 2 shall include, without limitation:
 - (i) barrier options;
 - (ii) Asian options; and
 - (iii) digital options.
 - (b) instruments whose value depends on the correlation between multiple underlyings, which for the purpose of paragraph 2 shall include, without limitation:
 - (i) basket options, excluding options specified in point (c) of paragraph 7;
 - (ii) best-of-options;
 - (iii) spread options;

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- (iv) basis options;
 - (v) Bermudan options; and
 - (vi) Quanto options;
- (c) instruments with behavioural risk where a *retail client* may prepay or exercise an option in a manner that does not maximise the value of the instrument for the client.
7. Where an instrument includes one or more of the following risks, this, in itself, shall not cause the instrument to be exposed to residual risks in accordance with paragraph 2:
- (a) risk arising from a 'cheapest-to-deliver' option;
 - (b) 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;
 - (c) correlation risk arising from instruments referencing an index; and/or
 - (d) dividend risk arising from instruments where the underlying is not solely dividend payments.

[Note: Paragraphs 1 to 4 of this rule correspond to paragraphs 1 to 4 of Article 325u of *CRR* as applied immediately before revocation by the *Treasury*]

SECTION 5 OWN FUNDS REQUIREMENTS FOR THE DEFAULT RISK

ARTICLE 325v DEFINITIONS AND GENERAL PROVISIONS

1. For the purposes of this Section 5, the following definitions apply:
- (a) 'covered bonds' means CRR covered bonds which meet the requirements set out in Credit Risk: Standardised Approach (CRR) Part Article 129;
 - (b) 'short exposure' means that the default of an *issuer* or group of *issuers* leads to a gain for the institution, regardless of the type of instrument or transaction creating the exposure;
 - (c) 'long exposure' means that the default of an *issuer* or group of *issuers* leads to a loss for the institution, regardless of the type of instrument or transaction creating the exposure;
 - (d) 'gross jump-to-default (JTD) amount' means the estimated size of the loss or gain that the default of the obligor would produce for a specific exposure;
 - (e) 'net jump-to-default (JTD) amount' means the estimated size of the loss or gain that an institution would incur due to the default of an obligor, after offsetting between gross JTD amounts has taken place;
 - (f) 'loss given default or LGD' means the loss given default of the obligor on an instrument issued by that obligor expressed as a share of the notional amount of the instrument;
 - (g) 'default risk weight' means the percentage representing the estimated probability of the default of each obligor, according to the creditworthiness of that obligor; and
 - (h) 'Simple, transparent and standardised (STS) securitisation' means securitisations which meet the requirements for simple, transparent and standardised securitisations pursuant to [Regulation (EU) 2017/2402].
2. Own funds requirements for the default risk shall apply to debt and equity instruments, to derivative instruments having those instruments as underlyings and to derivatives, the pay-offs or fair values of which are affected by the default of an obligor other than the counterparty to the derivative instrument itself. An institution shall calculate default risk requirements separately for each of the following types of instruments: non-securitisations, securitisations that are not

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included in the *ACTP* and securitisations that are included in the *ACTP*. An institution shall apply final own funds requirements for the default risk which shall be the sum of those three components.

[Note: This rule corresponds to Article 325v of *CRR* as it applied immediately before revocation by the *Treasury*]

SUBSECTION 1 OWN FUNDS REQUIREMENTS FOR THE DEFAULT RISK FOR NON-SECURITISATIONS

ARTICLE 325w GROSS JUMP-TO-DEFAULT AMOUNTS

1. An institution shall calculate the gross JTD amounts for each long exposure to debt instruments as follows:

$$JTD_{long} = \max \{V_A - V_D; 0\}$$

where:

JTD_{long} = the gross JTD amount for the long exposure;

V_A = the *market value* of the instrument from which the exposures arises for the institution at the time of the calculation;

V_D = the *market value* of the instrument from which the exposures arises for the institution, calculated under the assumption that, at the time of the calculation, the debt instrument defaulted and experienced a recovery rate, calculated with respect to the face value of the debt instrument, equal to (1-LGD) where LGD is LGD as assigned to the debt instruments in accordance with paragraph 3.

2. An institution shall calculate the gross JTD amounts for each short exposure to debt instruments as follows:

$$JTD_{short} = \min \{V_A - V_D; 0\}$$

where:

JTD_{short} = the gross JTD amount for the short exposure;

V_A = the *market value* of the instrument from which the exposures arises for the institution at the time of the calculation;

V_D = the *market value* of the instrument from which the exposures arises for the institution, calculated under the assumption that, at the time of the calculation, the debt instrument defaulted and experienced a recovery rate, calculated with respect to the face value of the debt instrument, equal to (1-LGD) where LGD is LGD as assigned to the debt instruments in accordance with paragraph 3.

3. For the purpose of determining the recovery rate for the calculation set out in paragraphs 1 and 2, an institution shall apply an LGD for debt instruments as follows:
 - (a) exposures to non-senior debt instruments shall be assigned an LGD of 100%;
 - (b) exposures to senior debt instruments shall be assigned an LGD of 75%; and
 - (c) exposures to covered bonds shall be assigned an LGD of 25%.
4. For exposures to equity instruments, an institution shall calculate the gross JTD amounts as follows, instead of using the formulas referred to in paragraphs 1 and 2:

$$JTD_{long} = \max \{V_A - V_D; 0\}$$

$$JTD_{short} = \min \{V_A - V_D; 0\}$$

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where:

JTD_{long} = the gross JTD amount for the long exposure;

JTD_{short} = the gross JTD amount for the short exposure;

V_A = the *market value* of the instrument from which the exposures arises for the institution at the time of the calculation;

V_D = the *market value* of the instrument from which the exposures arises for the institution, calculated under the assumption that, at the time of the calculation, the equity instrument defaulted and experienced a full loss in value.

5. In the case of exposures to default risk arising from derivative instruments whose pay-offs in the event of the default of the obligor are not related to the notional amount of a specific instrument issued by that obligor or to the LGD of the obligor or an instrument issued by that obligor, an institution shall calculate the gross JTD amount as the difference between the *market value* of the instrument from which the exposure arises for the institution at the time of the calculation and the *market value* of the instrument from which the exposure arises calculated under the assumption that the obligor defaulted at that time.
6. By way of derogation from paragraph 5, if the obligor was already defaulted at the time of the calculation, and the *market value* of the instrument from which the exposure arises for the institution at the time already reflects the gain or loss resulting from the default of the obligor, an institution shall regard the gross JTD amount of the exposure to be zero.
7. By way of derogation from paragraphs 1, 2 and 4, if the contractual or legal terms of an instrument allow for the unwinding of that instrument with no exposure to default risk, then the gross JTD amount for such instrument shall be equal to zero.

[Note: This rule corresponds to Article 325w of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 325x NET JUMP-TO-DEFAULT AMOUNTS

1. An institution shall calculate net JTD amounts by offsetting the gross JTD amounts of short exposures and long exposures in accordance with this Article. Offsetting shall only be possible between exposures to the same obligor where the short exposures have the same seniority as, or lower seniority than, the long exposures.
2. Offsetting shall be either full or partial, depending on the maturities of the offsetting exposures:
 - (a) offsetting shall be full where all offsetting exposures have maturities of one year or more; and
 - (b) offsetting shall be partial where at least one of the offsetting exposures has a maturity of less than one year, in which case the size of the JTD amount of each exposure with a maturity of less than one year shall be multiplied by the ratio of the exposure's maturity relative to one year, with a floor of three months.
3. Where no offsetting is possible gross JTD amounts shall equal net JTD amounts in the case of exposures with maturities of one year or more. Gross JTD amounts with maturities of less than one year shall be multiplied by the ratio of the exposure's maturity relative to one year, with a floor of three months, to calculate net JTD amounts.
4. For the purposes of paragraphs 2 and 3, the maturities of the derivative contracts shall be considered, rather than those of their underlyings. An institution shall assign a maturity of either

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one year or three months to cash equity exposures and may assign a maturity of three months to equity derivative exposures, in each case at the institution's discretion.

- For the purposes of paragraph 1, an institution shall treat a guaranteed bond as an exposure to the underlying obligor, or where the conditions set out in paragraphs 1 and 3 of Credit Risk Mitigation (CRR) Part Article 213 and paragraph 1 of Credit Risk Mitigation (CRR) Part Article 215 are met, to the guarantor.

[Note: Paragraphs 1 to 4 of this rule correspond to paragraphs 1 to 4 of Article 325x of CRR as applied immediately before revocation by the *Treasury*]

**ARTICLE 325y CALCULATION OF THE OWN FUNDS REQUIREMENTS FOR THE
DEFAULT RISK**

- An institution shall multiply net JTD amounts, irrespective of the type of counterparty, by the default risk weights that correspond to their credit quality, as specified in Table 2:

Table 2

Credit Quality		Default risk weight
Investment grade	Exposures rated as: - AAA by Fitch Ratings Ireland Limited; - Aaa by Moody's Investors Service; -AAA by S&P Global Ratings Europe Limited or equivalently rated by other ECAs	0.5%
	AA+ to AA - or equivalently rated by other ECAs	2%
	A+ to A - or equivalently rated by other ECAs	3%
	BBB+ to BBB - or equivalently rated by other ECAs	6%
Non-investment grade	BB+ to BB - or equivalently rated by other ECAs	15%
	B+ to B - or equivalently rated by other ECAs	30%
	CCC+ and below - or equivalently rated by other ECAs	50%
Unrated		15%
Defaulted		100%

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[Note: Table 1 was previously included in Article 325k, which has now been deleted]

2. Exposures which would receive a 0% risk-weight under the standardised approach for credit risk in accordance with the Credit Risk: Standardised Approach (CRR) Part shall receive a 0% default risk weight for the own funds requirements for default risk.
3. The weighted net JTD amount shall be allocated to the following buckets: corporates, sovereigns, and local governments/municipalities.
4. Weighted net JTD amounts shall be aggregated within each bucket, in accordance with the following formula:

$$DRC_b = \max\left\{\left(\sum_{i \in long} RW_i \cdot net JTD_i\right) - WtS \times \left(\sum_{i \in short} RW_i \cdot |net JTD_i|\right); 0\right\}$$

where:

DRC_b = the own funds requirement for the default risk for bucket b ;

i = the index that denotes an instrument belonging to bucket b ;

RW_i = the risk weight;

WtS = a ratio recognising a benefit for hedging relationships within a bucket, which shall be calculated as follows:

$$WtS = \frac{\sum netJTD_{long}}{\sum netJTD_{long} + \sum |netJTD_{short}|}$$

For the purposes of calculating the DRC_b and the WtS , the long positions and short positions shall be aggregated for all positions within a bucket, regardless of the credit quality step to which those positions are allocated, to produce the bucket-specific own funds requirements for the default risk.

5. The final own funds requirement for the default risk for non-securitisations shall be calculated as the simple sum of the bucket-level own funds requirements.
6. The determination of rating for a net JTD amount shall be on the basis of an external credit assessment by a nominated ECAI of the corresponding *issuer*. For an individual *issuer* for which a credit assessment by a nominated ECAI is not available, an institution shall map the internal rating of the *issuer* to one of the external credit assessments using the approach referred to in the Credit Risk: Internal Ratings Based Approach (CRR) Part.

[Note: Paragraphs 1 to 5 of this rule correspond to paragraphs 1 to 5 of Article 325y of CRR as applied immediately before revocation by the *Treasury*]

SUBSECTION 2 OWN FUNDS REQUIREMENTS FOR THE DEFAULT RISK FOR SECURITISATIONS NOT INCLUDED IN THE ACTP

ARTICLE 325z JUMP-TO-DEFAULT AMOUNTS

1. Gross jump-to-default amounts for securitisation exposures shall be their *market value* or, if their *market value* is not available, their fair value determined in accordance with the applicable accounting framework.
2. An institution shall determine net jump-to-default amounts by offsetting long gross jump-to-default amounts and short gross jump-to-default amounts. Offsetting shall only be possible between securitisation exposures with the same underlying asset pool and belonging to the same tranche. No offsetting shall be permitted between securitisation exposures with different underlying asset pools, even where the attachment and detachment points are the same.
3. Where, by decomposing or combining existing securitisation exposures, other existing securitisation exposures can be perfectly replicated, except for the maturity dimension, the

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exposures resulting from that decomposition or combination may be used instead of the existing securitisation exposures for the purposes of offsetting.

4. Where, by decomposing or combining existing exposures in underlying names, the entire tranche structure of an existing securitisation exposure can be perfectly replicated, the exposures resulting from that decomposition or combination may be used instead of the existing securitisation exposures for the purposes of offsetting. Where underlying names are used in that manner, they shall be removed from the non-securitisation default risk treatment.
5. Article 325x shall apply to both existing securitisation exposures and to securitisation exposures used in accordance with paragraph 3 or 4 of this Article. The relevant maturities shall be those of the securitisation tranches.

[Note: This rule corresponds to Article 325z of *CRR* as it applied immediately before revocation by the *Treasury*]

**ARTICLE 325aa CALCULATION OF THE OWN FUNDS REQUIREMENT FOR THE
DEFAULT RISK FOR SECURITISATIONS**

1. An institution shall multiply net JTD amounts of securitisation exposures by 8% of the risk weight that applies to the relevant securitisation exposure, including STS securitisations, in the non-trading book in accordance with the hierarchy of approaches set out in the Credit Risk: Standardised Approach (*CRR*) Part and irrespective of the type of counterparty.
2. An institution shall apply a maturity of one year to all tranches, where risk weights are calculated in accordance with Article 259 or Article 263 of *CRR*.
3. An institution shall cap the risk-weighted JTD amounts for individual cash securitisation exposures at the fair value of the position.
4. An institution shall assign risk-weighted net JTD amounts shall be assigned to the following buckets:
 - (a) one common bucket for all corporates, regardless of the region;
 - (b) 44 different buckets corresponding to one bucket per region for each of the 11 asset classes defined in the second and third subparagraphs;

For the purposes of the first subparagraph, the 11 asset classes are:

- (i) asset-backed commercial paper;
- (ii) auto loans/leases;
- (iii) residential mortgage-backed securities;
- (iv) credit cards;
- (v) commercial mortgage-backed securities;
- (vi) collateralised loan obligations;
- (vii) collateralised debt obligations squared;
- (viii) small and medium-sized enterprises;
- (ix) student loans;
- (x) other retail; and
- (xi) other wholesale.

For the purposes of the first subparagraph, the four regions are:

- (A) Asia;

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- (B) Europe;
 - (C) North America; and
 - (D) the rest of the world.
5. In order to assign a securitisation exposure to a bucket, an institution shall rely on a classification commonly used in the market. An institution shall assign each securitisation exposure to only one of the buckets referred to in paragraph 4. Any securitisation exposure that an institution cannot assign to a bucket for an asset class or region shall be assigned to the asset class 'other retail' or 'other wholesale' or to the region 'rest of the world', respectively.
6. An institution shall aggregate weighted net JTD amounts within each bucket in the same manner as for default risk of non-securitisation exposures, using the formula in paragraph 4 of Article 325y, resulting in the own funds requirement for the default risk for each bucket.
7. The final own funds requirement for the default risk for securitisations not included in the *ACTP* shall be calculated as the simple sum of the bucket-level own funds requirements.

[Note: This rule corresponds to Article 325aa of *CRR* as it applied immediately before revocation by the *Treasury*]

SUBSECTION 3 OWN FUNDS REQUIREMENT FOR THE DEFAULT RISK OF SECURITISATIONS INCLUDED IN THE ACTP

ARTICLE 325ab SCOPE

1. For the *ACTP*, an institution shall ensure that the own funds requirements includes the default risk for securitisation exposures and for non-securitisation hedges. Those hedges shall be removed from the default risk calculations for non-securitisation. There shall be no diversification benefit between the own funds requirements for the default risk for non-securitisations, the own funds requirements for the default risk for securitisations not included in the *ACTP* and own funds requirements for the default risk for securitisations included in the *ACTP*.
2. For traded non-securitisation credit and equity derivatives, an institution shall determine JTD amounts by individual constituents applying a look-through approach.

[Note: This rule corresponds to Article 325ab of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 325ac JUMP-TO-DEFAULT AMOUNTS FOR THE ACTP

1. For the purposes of this Article, the following definitions apply:
- (a) 'decomposition using a valuation model' means that a single name constituent of a securitisation is valued as the difference between the unconditional value of the securitisation and the conditional value of the securitisation assuming that single name defaults with an LGD of 100%;
 - (b) 'replication' means that the combination of individual securitisation index tranches are combined to replicate another tranche of the same index series, or to replicate an untranching position in the index series; and
 - (c) 'decomposition' means replicating an index by a securitisation of which the underlying exposures in the pool are identical to the single name exposures that compose the index.
2. The gross JTD amounts for securitisation exposures and non-securitisation exposures in the *ACTP* shall be their *market value* or, if their *market value* is not available, their fair value determined in accordance with the applicable accounting framework.

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3. Nth-to-default products shall be treated as tranching products with the following attachment and detachment points:
 - (a) attachment point = $(N - 1) / \text{Total Names}$;
 - (b) detachment point = $N / \text{Total Names}$; where 'Total Names' shall be the total number of names in the underlying basket or pool.
4. An institution shall determine net JTD amounts by offsetting long gross JTD amounts and short gross JTD amounts. Offsetting shall only be possible between exposures that are otherwise identical except for maturity. Offsetting shall only be possible as follows:
 - (a) for indices, index tranches and bespoke tranches, offsetting shall be possible across maturities within the same index family, series and tranche, subject to the provisions on exposures of less than one year laid down in Article 325x; long gross JTD amounts and short gross JTD amounts that perfectly replicate each other may be offset through decomposition into single name equivalent exposures using a valuation model; in such cases, the sum of the gross JTD amounts of the single name equivalent exposures obtained through decomposition shall be equal to the gross JTD amount of the undecomposed exposure;
 - (b) offsetting through decomposition as set out in point (a) shall not be allowed for resecuritisations or derivatives on securitisation;
 - (c) for indices and index tranches, offsetting shall be possible across maturities within the same index family, series and tranche by replication or by decomposition; where the long exposures and short exposures are otherwise equivalent, apart from one residual component, offsetting shall be allowed and the net JTD amount shall reflect the residual exposure;
 - (d) different tranches of the same index series, different series of the same index and different index families may not be used to offset each other.

[Note: This rule corresponds to Article 325ac of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 325ad CALCULATION OF THE OWN FUNDS REQUIREMENTS FOR THE DEFAULT RISK FOR THE ACTP

1. An institution shall multiply net JTD amounts by:
 - (a) for non-tranching products, the default risk weights corresponding to their credit quality as specified in paragraphs 1 and 2 of Article 325y;
 - (b) for tranching products, the default risk weights referred to in paragraph 1 of Article 325aa.
2. Risk-weighted net JTD amounts shall be assigned to buckets that correspond to an index.
3. Weighted net JTD amounts shall be aggregated within each bucket in accordance with the following formula:

$$DRC_b = \max \left\{ \left(\sum_{i \in \text{long}} RW_i \cdot \text{net JTD}_i \right) - WtS_{ACTP} \cdot \left(\sum_{i \in \text{short}} RW_i \cdot |\text{net JTD}_i| \right); 0 \right\}$$

where:

DRC_b = the own funds requirement for the default risk for bucket b ;

i = an instrument belonging to bucket b ;

WtS_{ACTP} = the ratio recognising a benefit for hedging relationships within a bucket, which shall be calculated in accordance with the WtS formula set out in paragraph 4 of Article 325y, but

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using long positions and short positions across the entire *ACTP* and not just the positions in the particular bucket.

- An institution shall calculate the own funds requirements for the default risk for the *ACTP* by using the following formula:

$$DRC_{ACTP} = \max \left\{ \sum_b \max\{DRC_b, 0\} + 0.5 \cdot (\min\{DRC_b, 0\}); 0 \right\}$$

where:

DRC_{ACTP} = the own funds requirement for the default risk for the *ACTP*;

DRC_b = the own funds requirement for the default risk for bucket *b*.

[Note: This rule corresponds to Article 325ad of *CRR* as it applied immediately before revocation by the *Treasury*]

SECTION 6 RISK WEIGHTS AND CORRELATIONS

SUBSECTION 1 DELTA RISK WEIGHTS AND CORRELATIONS

ARTICLE 325ae RISK WEIGHTS FOR GENERAL INTEREST RATE RISK

- For currencies not included in the most liquid currency sub-category as referred to in point (a) of paragraph 8 of Market Risk: Internal Model Approach (*CRR*) Part Article 325bd, the risk weights of the sensitivities to the risk-free rate risk factors shall be the following for each sub-bucket in Table 3.

Table 3

Sub-Bucket	Maturity	Risk Weight
1	0.25 years	1.7%
2	0.5 years	1.7%
3	One year	1.6%
4	Two years	1.3%
5	Three years	1.2%
6	Five years	1.1%
7	10 years	1.1%
8	15 years	1.1%
9	20 years	1.1%
10	30 years	1.1%

- An institution shall apply a risk weight of 1.6% to all sensitivities of inflation and to cross currency basis risk factors.

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3. The risk weights of all risk factors relating to the currencies included in the most liquid currency sub-category as referred to in point (a) of paragraph 8 of Market Risk: Internal Model Approach (CRR) Part Article 325bd and to the domestic currency of the institution shall be the risk weights referred to in Table 3 and paragraph 2 divided by $\sqrt{2}$.

[Note: This rule corresponds to Article 325ae of CRR as it applied immediately before revocation by the Treasury]

ARTICLE 325af INTRA BUCKET CORRELATIONS FOR GENERAL INTEREST RATE RISK

1. Between two weighted sensitivities of GIRR factors WS_k and WS_l within the same bucket, and with the same assigned maturity but corresponding to different curves, an institution shall set correlation ρ_{kl} at 99.90%.
2. Between two weighted sensitivities of GIRR factors WS_k and WS_l within the same bucket, corresponding to the same curve, but having different maturities, an institution shall set correlation in accordance with the following formula:

$$\max \left[e^{\left(-\theta \cdot \frac{|T_k - T_l|}{\min\{T_k, T_l\}} \right)}; 40\% \right]$$

where:

T_k (respectively T_l) = the maturity that relates to the risk free rate;

$\theta = 3\%$.

3. Between two weighted sensitivities of GIRR factors WS_k and WS_l within the same bucket, corresponding to different curves and having different maturities, an institution shall set the correlation ρ_{kl} as equal to the correlation parameter specified in paragraph 2, multiplied by 99.90%.
4. Between any given weighted sensitivity of GIRR factors WS_k and any given weighted sensitivity of inflation risk factors WS_l , an institution shall set the correlation at 40%.
5. Between any given weighted sensitivity of cross-currency basis risk factors WS_k and any given weighted sensitivity of GIRR factors WS_l , including another cross-currency basis risk factor, the correlation shall be set at 0%.
6. Between any given weighted sensitivity of inflation risk factor WS_k and any given weighted sensitivity of a different inflation risk factor in the same currency WS_l , an institution shall set the correlation at 99.90%.

[Note: Paragraphs 1 to 5 of this rule corresponds to paragraphs 1 to 5 of Article 325af of CRR as applied immediately before revocation by the Treasury]

ARTICLE 325ag CORRELATIONS ACROSS BUCKETS FOR GENERAL INTEREST RATE RISK

1. An institution shall use the parameter $\gamma_{bc} = 50\%$ to aggregate risk factors belonging to different buckets.
2. [Note: Provision left blank]

[Note: Paragraph 1 of this rule corresponds to paragraph 1 of Article 325ag of CRR as it applied immediately before revocation by the Treasury]

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

ARTICLE 325ah RISK WEIGHTS FOR CREDIT SPREAD RISK FOR NON-SECURITISATIONS

1. Risk weights for the sensitivities to CSR factors for non-securitisations shall be the same for all maturities (0.5 years, one year, three years, five years, 10 years) within each bucket in Table 4:

Table 4

Bucket number	Credit quality	Sector	RW
1	Investment grade	Central government, including central banks, of a <i>third country</i> , <i>multilateral development banks</i> and international organisations referred to in Article 117(2) or Article 118 of the Credit Risk: Standardised Approach (CRR) Part	0.5%
2		Regional or local authority and public sector entities	1.0%
3		Financial sector entities including credit institutions incorporated or established by a central government, a regional government or a local authority and promotional lenders	5.0%
4		Basic materials, energy, industrials, agriculture, manufacturing, mining and quarrying	3.0%
5		Consumer goods and services, transportation and storage, administrative and support service activities	3.0%
6		Technology, telecommunications	2.0%
7		Health care, utilities, professional and technical activities	1.5%
8	Investment grade (AA- or higher (or equivalently rated by ECAIs))	Covered bonds issued by credit institutions	1.5%

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	Investment grade (Other)	Covered bonds issued by credit institutions	2.5%
9	Non-Investment grade and unrated	Central government, including central banks, of a <i>third country</i> , <i>multilateral development banks</i> and international organisations referred to in Article 117(2) or Article 118 of the Credit Risk: Standardised Approach (CRR) Part	2.0%
10		Regional or local authority and public sector entities	4.0%
11		Financial sector entities including credit institutions incorporated or established by a central government, a regional government or a local authority and promotional lenders	12.0%
12		Basic materials, energy, industrials, agriculture, manufacturing, mining and quarrying	7.0%
13		Consumer goods and services, transportation and storage, administrative and support service activities	8.5%
14		Technology, telecommunications	5.5%
15		Health care, utilities, professional and technical activities	5.0%
16		Other Sector	12.0%
17		<i>Listed</i> credit indices with a majority of its individual constituents being investment grade	1.5%
18		<i>Listed</i> credit indices with a majority of its individual constituents being non-investment grade or unrated	5.0%

2. To assign a risk exposure to a sector, an institution shall rely on a classification that is commonly used in the market for grouping *issuers* by sector. An institution shall assign each

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issuer to only one of the sector buckets in Table 4. Risk exposures from any *issuer* that an institution cannot assign to a sector in such a manner shall be assigned to bucket 16 in Table 4.

3. The assignment of a risk exposure to investment grade or non-investment grade and unrated shall be on the basis of an external credit assessment by a nominated ECAI of the corresponding *issuer*. For an individual *issuer* for which a credit assessment by a nominated ECAI is not available, an institution using the approach referred to in the Credit Risk: Internal Ratings Based Approach (CRR) Part shall map the internal rating of the *issuer* to one of the external credit assessments.
4. An institution shall assign an exposure to any non-tranched mortgage-backed security issued by an entity established or chartered by a government to serve public purposes specified by the legislative body of a country, but whose debt obligations are not explicitly guaranteed by the credit of that government (also known as a 'government sponsored enterprise') to bucket 2 in Table 4.

[Note: Paragraphs 1 and 2 of this rule correspond to paragraphs 1 and 2 of Article 325ah of CRR as applied immediately before revocation by the *Treasury*]

ARTICLE 325ai INTRA-BUCKET CORRELATIONS FOR CREDIT SPREAD RISK FOR NON-SECURITISATIONS

1. An institution shall set the correlation parameter ρ_{kl} between two sensitivities WS_k and WS_l within the same bucket as follows:

$$\rho_{kl} = \rho_{kl}^{(name)} \cdot \rho_{kl}^{(tenor)} \cdot \rho_{kl}^{(basis)}$$

where:

$\rho_{kl}^{(name)} = 1$ where the two names of sensitivities k and l are identical;

35% where the two names of sensitivities k and l are assigned to buckets 1 to 15 in Table 4 of paragraph 1 of Article 325ah; and

80% where the two names of sensitivities k and l are assigned to buckets 17 to 18 in Table 4 of paragraph 1 of Article 325ah;

$\rho_{kl}^{(tenor)} = 1$ where the two vertices of the sensitivities k and l are identical, otherwise it shall be equal to 65%;

$\rho_{kl}^{(basis)} = 1$ where the two sensitivities are related to the same curves, otherwise it shall be equal to 99.90%.

2. The correlation parameters referred to in paragraph 1 of this Article shall not apply to bucket 16 in Table 4 of paragraph 1 of Article 325ah. The own funds requirement for the delta risk aggregation formula within bucket 16 in Table 4 of paragraph 1 of Article 325ah shall be equal to the sum of the absolute values of the net weighted sensitivities allocated to that bucket:

$$K_{b(bucket\ 16)} = \sum_k |WS_k|$$

[Note: This rule corresponds to Article 325ai of CRR as it applied immediately before revocation by the *Treasury*]

ARTICLE 325aj CORRELATIONS ACROSS BUCKETS FOR CREDIT SPREAD RISK FOR NON-SECURITISATIONS

An institution shall set the correlation parameter γ_{bc} that applies to the aggregation of sensitivities between different buckets as follows:

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$$\gamma_{bc} = \gamma_{bc}^{(rating)} \cdot \gamma_{bc}^{(sector)}$$

where:

$\gamma_{bc}^{(rating)} = 1$ where the two buckets have the same rating category (either investment grade, non-investment grade or unrated), otherwise it shall be equal to 50%;

$\gamma_{bc}^{(sector)} = 1$ where the two buckets belong to the same sector, and otherwise shall be equal to the corresponding percentage set out in Table 5:

Table 5

Bucket	1 and 9	2 and 10	3 and 11	4 and 12	5 and 13	6 and 14	7 and 15	8	16	17	18
1 and 9		75%	10%	20%	25%	20%	15%	10%	0%	45%	45%
2 and 10			5%	15%	20%	15%	10%	10%	0%	45%	45%
3 and 11				5%	15%	20%	5%	20%	0%	45%	45%
4 and 12					20%	25%	5%	5%	0%	45%	45%
5 and 13						25%	5%	15%	0%	45%	45%
6 and 14							5%	20%	0%	45%	45%
7 and 15								5%	0%	45%	45%
8									0%	45%	45%
16										0%	0%
17											75%
18											

[Note: This rule corresponds to Article 325aj of CRR as it applied immediately before revocation by the Treasury]

ARTICLE 325ak RISK WEIGHTS FOR CREDIT SPREAD RISK FOR SECURITISATIONS INCLUDED IN THE ACTP

1. Risk weights for the sensitivities to CSR factors for securitisations included in the ACTP risk factors shall be the same for all maturities (0.5 years, one year, three years, five years, 10 years) within each bucket and shall be specified for each bucket in Table 6:

Table 6

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

Bucket number	Credit quality	Sector	RW
1	Investment grade	Central government, including central banks, of a <i>third country, multilateral development banks</i> and international organisations referred to in Article 117(2) or Article 118 of the Credit Risk: Standardised Approach (CRR) Part	4.0%
2		Regional or local authority and public sector entities	4.0%
3		Financial sector entities including credit institutions incorporated or established by a central government, a regional government or a local authority and promotional lenders	8.0%
4		Basic materials, energy, industrials, agriculture, manufacturing, mining and quarrying	5.0%
5		Consumer goods and services, transportation and storage, administrative and support service activities	4.0%
6		Technology, telecommunications	3.0%
7		Health care, utilities, professional and technical activities	2.0%
8		Covered bonds issued by credit institutions	6.0%
9	Non-Investment grade and unrated	Central government, including central banks, of a <i>third country, multilateral development banks</i> and international organisations referred to in Article 117(2) or Article 118 of the Credit Risk: Standardised Approach (CRR)	13.0%

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		Part	
10		Regional or local authority and public sector entities	13.0%
11		Financial sector entities including credit institutions incorporated or established by a central government, a regional government or a local authority and promotional lenders	16.0%
12		Basic materials, energy, industrials, agriculture, manufacturing, mining and quarrying	10.0%
13		Consumer goods and services, transportation and storage, administrative and support service activities	12.0%
14		Technology, telecommunications	12.0%
15		Health care, utilities, professional and technical activities	12.0%
16	Other Sector		13.0%

2. The assignment of a risk exposure to investment grade or non-investment grade and unrated shall be on the basis of an external credit assessment by a nominated ECAI of the corresponding *issuer*. For an individual *issuer* for which a credit assessment by a nominated ECAI is not available, an institution using the approach referred to in the Credit Risk: Internal Ratings Based Approach (CRR) Part shall map the internal rating of the *issuer* to one of the external credit assessments.

[Note: This rule corresponds to Article 325ak of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 325al CORRELATIONS FOR CREDIT SPREAD RISK FOR SECURITISATIONS INCLUDED IN THE ACTP

1. An institution shall derive the delta risk correlation ρ_{kl} in accordance with Article 325ai, except that, for the purposes of this paragraph, $\rho_{kl}^{(basis)}$ shall be equal to 1 where the two sensitivities are related to the same curves, otherwise it shall be equal to 99.00%.
2. An institution shall derive γ_{bc} in accordance with Article 325aj.

[Note: This rule corresponds to Article 325al of *CRR* as it applied immediately before revocation by the *Treasury*]

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

ARTICLE 325am RISK WEIGHTS FOR CREDIT SPREAD RISK FOR SECURITISATIONS NOT INCLUDED IN THE ACTP

1. Risk weights for the sensitivities to *CSR* factors for securitisation not included in the *ACTP* shall be the same for all maturities (0.5 years, one year, three years, five years, 10 years) within each bucket in Table 7 as follows:

Table 7

Bucket number	Credit quality	Sector	RW
1	Senior Investment Grade	RMBS - Prime	0.9%
2		RMBS - Mid-prime	1.5%
3		RMBS - Sub-prime	2.0%
4		CMBS	2.0%
5		Asset backed securities (ABS) - Student Loans	0.8%
6		ABS - Credit Cards	1.2%
7		ABS - Auto	1.2%
8		Collateralised loan obligations (CLO) non- <i>ACTP</i>	1.4%
9	Non-senior Investment Grade	RMBS - Prime	1.125%
10		RMBS - Mid-prime	1.875%
11		RMBS - Sub-prime	2.5%
12		CMBS	2.5%
13		ABS - Student Loans	1.0%
14		ABS - Credit Cards	1.5%
15		ABS - Auto	1.5%
16		Collateralised loan obligations (CLO) non- <i>ACTP</i>	1.75%
17	Non-Investment grade and unrated	RMBS - Prime	1.575%
18		RMBS - Mid-prime	2.625%
19		RMBS - Sub-prime	3.5%
20		CMBS	3.5%

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21		ABS - Student Loans	1.4%
22		ABS - Credit Cards	2.1%
23		ABS - Auto	2.1%
24		Collateralised loan obligations (CLO) non- <i>ACTP</i>	2.45%
25	Other sector		3.5%

- To assign a risk exposure to a sector, an institution shall rely on a classification that is commonly used in the market for grouping tranches by sector. An institution shall assign each tranche to one of the sector buckets in Table 7. Risk exposures from any tranche that an institution cannot assign to a sector in such a manner shall be assigned to bucket 25 of Table 7.
- The assignment of a risk exposure to investment grade or non-investment grade and unrated shall be on the basis of an external credit assessment by a nominated ECAI of the corresponding tranche. For an individual tranche for which a credit assessment by a nominated ECAI is not available, an institution using the approach referred to in the Credit Risk: Internal Ratings Based Approach (CRR) Part shall map the internal rating of the tranche to one of the external credit assessments.

[Note: This rule corresponds to Article 325am of *CRR* as it applied immediately before revocation by the *Treasury*]

Article 325an INTRA-BUCKET CORRELATIONS FOR CREDIT SPREAD RISK FOR SECURITISATIONS NOT INCLUDED IN THE ACTP

- An institution shall set the correlation parameter ρ_{kl} between two sensitivities WS_k and WS_l within the same bucket as follows:

$$\rho_{kl} = \rho_{kl}^{(tranche)} \cdot \rho_{kl}^{(tenor)} \cdot \rho_{kl}^{(basis)}$$

where:

$\rho_{kl}^{(tranche)} = 1$ where the two names of sensitivities k and l are within the same bucket and are related to the same securitisation tranche (more than 80% overlap in notional terms), otherwise it shall be equal to 40%;

$\rho_{kl}^{(tenor)} = 1$ where the two vertices of the sensitivities k and l are identical, otherwise it shall be equal to 80%;

$\rho_{kl}^{(basis)} = 1$ where the two sensitivities are related to the same curves, otherwise it shall be equal to 99.90%.

- The correlation parameters referred to in paragraph 1 shall not apply to bucket 25 in Table 7 of paragraph 1 of Article 325am. The own funds requirement for the delta risk aggregation formula within bucket 25 in Table 7 of paragraph 1 of Article 325am shall be equal to the sum of the absolute values of the net weighted sensitivities allocated to that bucket:

$$K_{b(bucket\ 25)} = \sum_k |WS_k|$$

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

[Note: This rule corresponds to Article 325an of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 325ao CORRELATIONS ACROSS BUCKETS FOR CREDIT SPREAD RISK FOR SECURITISATIONS NOT INCLUDED IN THE ACTP

1. An institution shall apply the correlation parameter γ_{bc} to the aggregation of sensitivities between different buckets at 0%.
2. An institution shall add the own funds requirement for bucket 25 of Table 7 to the overall risk class level capital, with no diversification or hedging effects recognised with any other bucket.

[Note: This rule corresponds to Article 325ao of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 325ap RISK WEIGHTS FOR EQUITY RISK

1. Risk weights for the sensitivities to equity and equity *repo* rate risk factors shall be specified for each bucket in Table 8 as follows:

Table 8

Bucket number	Market cap	Economy	Sector	Risk weight for equity spot price	Risk weight for equity <i>repo</i> rate
1	Large	Emerging market economy	Consumer goods and services, transportation and storage, administrative and support service activities, healthcare, utilities	55%	0.55%
2			Telecommunications, industrials	60%	0.60%
3			Basic materials, energy, agriculture, manufacturing, mining and quarrying	45%	0.45%
4			Financials including government-backed financials, <i>real estate</i> activities, technology	55%	0.55%
5		Advanced economy	Consumer goods and services, transportation and storage, administrative and support service activities, healthcare, utilities	30%	0.30%
6			Telecommunications, industrials	35%	0.35%
7			Basic materials, energy, agriculture, manufacturing, mining and quarrying	40%	0.40%

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8			Financials including government-backed financials, <i>real estate</i> activities, technology	50%	0.50%
9	Small	Emerging market economy	All sectors described under bucket numbers 1, 2, 3 and 4	70%	0.70%
10		Advanced economy	All sectors described under bucket numbers 5, 6, 7 and 8	50%	0.50%
11	Other sector			70%	0.70%
12	Large market cap, advanced economy equity indices			15%	0.15%
13	Other equity indices			25%	0.25%

2. For the purposes of this Article, what constitutes a small and a large market capitalisation shall be as specified in paragraph 9 of Market Risk: Internal Model Approach (CRR) Part Article 325bd.
3. For the purpose of applying risk weights for equity risk in this Article, the following countries shall constitute advanced economies:
 - (a) Australia;
 - (b) Canada;
 - (c) Countries that are member states of the European Union and have adopted the Euro as their currency;
 - (d) Denmark;
 - (e) Hong Kong SAR;
 - (f) Japan;
 - (g) Mexico;
 - (h) New Zealand;
 - (i) Norway;
 - (j) Singapore;
 - (k) Sweden;
 - (l) Switzerland;
 - (m) The *United Kingdom*; and
 - (n) The United States.

Countries not included in the first subparagraph shall constitute emerging markets.

4. When assigning a risk exposure to a sector, an institution shall rely on a classification that is commonly used in the market for grouping *issuers* by sector. An institution shall assign each *issuer* to one of the sector buckets in Table 8 and shall assign all *issuers* from the same industry to the same sector. Risk exposures from any *issuer* that an institution cannot assign to a sector in such a manner shall be assigned to bucket 11 in Table 8. Multinational or multi-sector equity *issuers* shall be assigned to a particular bucket on the basis of the most material region and sector in which the equity *issuer* operates.

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

[Note: This rule corresponds to Article 325ap(1), (2) and (4) of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 325aq INTRA-BUCKET CORRELATIONS FOR EQUITY RISK

1. An institution shall set the delta risk correlation parameter ρ_{kl} between two sensitivities WS_k and WS_l within the same bucket at 99.90% where one is a sensitivity to an equity spot price and the other is a sensitivity to an equity *repo* rate and where both sensitivities are related to the same equity *issuer* name.
2. In other cases than the cases referred to in paragraph 1, the correlation parameter ρ_{kl} between two sensitivities WS_k and WS_l to equity spot price within the same bucket shall be set as follows:
 - (a) 15% between two sensitivities within the same bucket that fall under the category large market capitalisation, emerging market economy (bucket number 1, 2, 3 or 4 in Table 8);
 - (b) 25% between two sensitivities within the same bucket that fall under the category large market capitalisation, advanced economy (bucket number 5, 6, 7 or 8 in Table 8);
 - (c) 7.5% between two sensitivities within the same bucket that fall under the category small market capitalisation, emerging market economy (bucket number 9 in Table 8);
 - (d) 12.5% between two sensitivities within the same bucket that fall under the category small market capitalisation, advanced economy (bucket number 10 in Table 8); and
 - (e) 80% between two sensitivities within the same bucket that fall under either index bucket (bucket number 12 or 13 in Table 8).
3. An institution shall set the correlation parameter ρ_{kl} between two sensitivities WS_k and WS_l to equity *repo* rate within the same bucket in accordance with points (a) to (e) in paragraph 2.
4. Between two sensitivities WS_k and WS_l within the same bucket where one is a sensitivity to an equity spot price and the other a sensitivity to an equity *repo* rate and both sensitivities relate to a different equity *issuer* name, an institution shall set the correlation parameter ρ_{kl} to the correlation parameters specified in paragraph 2, multiplied by 99.90%.
5. The correlation parameters specified in paragraphs 1 to 4 shall not apply to bucket 11 in Table 8. An institution shall ensure the own funds requirement for the delta risk aggregation formula within bucket 11 shall be equal to the sum of the absolute values of the net weighted sensitivities allocated to that bucket:

$$K_{b(\text{bucket } 11)} = \sum_k |WS_k|$$

[Note: This rule corresponds to Article 325aq of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 325ar CORRELATIONS ACROSS BUCKETS FOR EQUITY RISK

An institution shall apply the correlation parameter γ_{bc} to the aggregation of sensitivities between different buckets.

It shall be set in relation to the buckets of Table 8 in Article 325ap as follows:

- (a) 15% where the two buckets fall within buckets 1 to 10;
- (b) 0% where either of the two buckets fall within bucket number 11;
- (c) 75% where the two buckets fall within bucket number 12 and 13; and
- (d) 45% otherwise.

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

[Note: This rule corresponds to Article 325ar of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 325as RISK WEIGHTS FOR COMMODITY RISK

Risk weights for sensitivities to commodity risk factors shall be specified for each bucket in Table 9:

Table 9

Bucket number	Bucket name	Risk weight
1	Energy – solid combustibles	30%
2	Energy – liquid combustibles	35%
3a	Energy – electricity	60%
3b	Energy – carbon trading	60%
4	Freight	80%
5	Metals – non-precious	40%
6	Gaseous combustibles	45%
7	Precious metals (including gold)	20%
8	Grains and oilseed	35%
9	Livestock and dairy	25%
10	Softs and other agricultural commodities	35%
11	Other commodities	50%

[Note: This rule corresponds to Article 325as of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 325at INTRA-BUCKET CORRELATIONS FOR COMMODITY RISK

- For the purposes of this Article, any two commodities shall be considered distinct commodities where there exist in the market two contracts that are differentiated only by the underlying commodity to be delivered against each contract.
- In respect of bucket 3b in Table 10, an institution shall set the correlation parameter ρ_{kl} between two sensitivities WS_k and WS_l within the same bucket as follows:

$$\rho_{kl} = \rho_{kl}^{(commodity)} \cdot \rho_{kl}^{(tenor)} \cdot \rho_{kl}^{(basis)}$$

where:

$\rho_{kl}^{(commodity)} = 1$ where the two commodities of sensitivities k and l are identical, otherwise it shall be equal to the intra-bucket correlations in Table 10;

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

$\rho_{kl}^{(tenor)} = 1$ where the two vertices of the sensitivities k and l are identical, otherwise it shall be equal to 99%;

$\rho_{kl}^{(basis)} = 1$ where the two sensitivities are identical in the delivery location of a commodity, otherwise it shall be equal to 99.90%.

- 2a. In respect of all other buckets in Table 10 (other than bucket 3b), an institution shall set the correlation parameter ρ_{kl} between two sensitivities WS_k and WS_l within the same bucket as follows:

$$\rho_{kl} = \rho_{kl}^{(commodity)} \cdot \rho_{kl}^{(tenor)} \cdot \rho_{kl}^{(basis)}$$

where:

$\rho_{kl}^{(commodity)} = 1$ where the two commodities of sensitivities k and l are identical, otherwise it shall be equal to the intra-bucket correlations in Table 10;

$\rho_{kl}^{(tenor)} = 1$ where the two vertices of the sensitivities k and l are identical, otherwise it shall be equal to 99%;

$\rho_{kl}^{(basis)} = 1$ where the two sensitivities are identical in the delivery location of a commodity, otherwise it shall be equal to 99.90%.

3. The intra-bucket correlations $\rho_{kl}^{(commodity)}$ are:

Table 10

Bucket number	Bucket name	Correlation ρ_{kl} (commodity)
1	Energy - solid combustibles	55%
2	Energy - liquid combustibles	95%
3a	Energy - electricity	40%
3b	Energy - carbon trading	40%
4	Freight	80%
5	Metals – non-precious	60%
6	Gaseous combustibles	65%
7	Precious metals (including gold)	55%
8	Grains and oilseed	45%
9	Livestock and dairy	15%
10	Softs and other agricultural commodities	40%
11	Other commodity	15%

4. Notwithstanding paragraph 1, the following provisions apply:

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

- (a) two risk factors that are allocated to bucket 3a in Table 10 and that concern electricity which is generated in different regions or is delivered at different periods under the contractual agreement shall be considered distinct commodity risk factors; and
- (b) two risk factors that are allocated to bucket 4 in Table 10 and that concern freight where the freight route or week of delivery differ shall be considered distinct commodity risk factors.

[Note: This rule corresponds to Article 325at of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 325au CORRELATIONS ACROSS BUCKETS FOR COMMODITY RISK

1. An institution shall set the correlation parameter γ_{bc} applying to the aggregation of sensitivities between different buckets at:
 - (a) 20% where the two buckets fall within bucket numbers 1 to 10 in Table 10; and
 - (b) 0% where either of the two buckets is bucket number 11 in Table 10.

[Note: This rule corresponds to Article 325au of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 325av RISK WEIGHTS FOR FOREIGN EXCHANGE RISK

1. An institution shall apply a risk weight of 15% to all sensitivities of foreign exchange risk factors.
2. [Note: Provision left blank]
3. [Note: Provision left blank]
4. The risk weight of the foreign exchange risk factors included in the most liquid currency pairs sub-category as referred to in point (8)(b) of Market Risk: Internal Model Approach (*CRR*) Part Article 325bd shall be the risk weight referred to in paragraph 1 of this Article divided by $\sqrt{2}$.
5. [Note: Provision left blank]

[Note: Paragraph 1 and paragraph 4 of this rule correspond to paragraph 1 and paragraph 4 of Article 325av of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 325aw CORRELATIONS FOR FOREIGN EXCHANGE RISK

1. An institution must ensure a uniform correlation parameter γ_{bc} equal to 60% is applied to the aggregation of sensitivities to foreign exchange risk factors.

[Note: This rule corresponds to Article 325aw of *CRR* as it applied immediately before revocation by the *Treasury*]

SUBSECTION 2 VEGA AND CURVATURE RISK WEIGHTS AND CORRELATIONS

ARTICLE 325ax VEGA AND CURVATURE RISK WEIGHTS

1. Vega risk factors shall use the delta buckets referred to in Subsection 1 of Section 3, other than in respect of foreign exchange risk, where the buckets shall be as set out in paragraph 2 of Article 325q of this Part.
2. Risk weights for sensitivities to vega risk factors shall be assigned in accordance with the following table:

Table 11

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

Risk class	Risk weights
<i>GIRR</i>	100%
CSR non-securitisations	100%
CSR securitisations (<i>ACTP</i>)	100%
CSR securitisations (non- <i>ACTP</i>)	100%
Equity (large cap and indices)	77.78%
Equity (small cap and other sector)	100%
Commodity	100%
Foreign exchange	100%

- An institution shall use buckets in the context of delta risk in Subsection 1 in the curvature risk context, unless specified otherwise in this Part.
- For foreign exchange and equity curvature risk factors, the curvature risk weights shall be relative shifts equal to the delta risk weights referred to in Subsection 1.
- For *GIRR*, *CSR* and commodity curvature risk factors, the curvature risk weight shall be the parallel shift of all the vertices for each curve on the basis of the highest prescribed delta risk weight referred to in Subsection 1 for the relevant risk class.

[Note: This rule corresponds to Article 325ax of *CRR* as it applied immediately before revocation by the *Treasury*]

Article 325ay VEGA AND CURVATURE RISK CORRELATIONS

- Between vega risk sensitivities within the same bucket of the *GIRR* class, an institution shall set the correlation parameter ρ_{kl} as follows:

$$\rho_{kl} = \min\{\rho_{kl}^{(option\ maturity)} \cdot \rho_{kl}^{(underlying\ maturity)}; 1\}$$

where:

$\rho_{kl}^{(option\ maturity)} = e^{-\alpha \cdot \frac{(|T_k - T_l|)}{\min\{T_k, T_l\}}}$ where α shall be set at 1%, T_k and T_l shall be equal to the maturities of the options for which the vega sensitivities are derived, expressed as a number of years;

$\rho_{kl}^{(underlying\ maturity)} = e^{-\alpha \cdot \frac{(|T_k^U - T_l^U|)}{\min\{T_k^U, T_l^U\}}}$ where α is set at 1%, T_k^U and T_l^U shall be equal to the maturities of the underlyings of the options for which the vega sensitivities are derived, minus the maturities of the corresponding options, expressed in both cases as a number of years.

- Between vega risk sensitivities within a bucket of the other risk classes, an institution shall set the correlation parameter ρ_{kl} as follows:

$$\rho_{kl} = \min\{\rho_{kl}^{(DELTA)} \cdot \rho_{kl}^{(option\ maturity)}; 1\}$$

where:

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

$\rho_{kl}^{(DELTA)}$ = the delta intra-bucket correlation corresponding to the bucket to which vega risk factors k and l would be allocated;

$\rho_{kl}^{(option\ maturity)}$ shall be set in accordance with paragraph 1.

3. With regard to vega risk sensitivities between buckets within a risk class (*GIRR* and non-*GIRR*), the same correlation parameters for γ_{bc} , as specified for delta correlations for each risk class in Section 4, shall be used in the vega risk context.
4. There shall be no diversification or hedging benefit recognised in the standardised approach between vega risk factors and delta risk factors. Vega risk charges and delta risk charges shall be aggregated by simple summation.
5. The curvature risk correlations shall be the square of corresponding delta risk correlations ρ_{kl} and γ_{bc} referred to in Subsection 1.

[Note: This rule corresponds to Article 325a of *CRR* as it applied immediately before revocation by the *Treasury*]

Near-final part 1

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

Annex J

Market Risk: Simplified Standardised Approach (CRR) Part

In this Annex, the text is all new and is not underlined.

Part

MARKET RISK: SIMPLIFIED STANDARDISED APPROACH (CRR)

Chapter content

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This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

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This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

1 APPLICATION AND DEFINITIONS

1.1 This Part applies to:

- (a) a *firm* that is a *CRR firm* but not an *ICR firm*; and
- (b) a *CRR consolidation entity* that is not an *ICR consolidation entity*.

1.2 For the purposes of this Part, the following definitions apply:

convertible bond

means a *security* which gives the investor the right to convert the *security* into a *share* at an agreed price on an agreed basis.

FRA

means a forward-rate agreement.

2 LEVEL OF APPLICATION

Application of requirements on an individual basis

2.1 An institution shall comply with this Part on an individual basis.

[Note: Rule 2.1 sets out an equivalent provision to Article 6(1) of *CRR* that applies to this Part]

2.2 Where an institution has been given permission under Article 9(1) of *CRR* it shall incorporate relevant subsidiaries in the calculation undertaken to comply with rule 2.1.

[Note: Rule 2.2 applies Article 9(1) of *CRR* to this Part where a permission under that Article has been given]

Application of requirements on a consolidated basis

2.3 A *CRR consolidation entity* shall comply with this Part on the basis of its consolidated situation.

[Note: Rule 2.3 sets out an equivalent provision to the first sentence of Article 11(1) of *CRR* that applies to this Part]

2.4 For the purposes of applying this Part on a consolidated basis, the terms 'institution' and 'UK parent institution' shall include a *CRR consolidation entity* (if it would not otherwise have been included).

[Note: Rule 2.4 sets out an equivalent provision to the first sub-paragraph of Article 11(2) of *CRR* that applies to this Part]

2.5 The expression 'consolidated situation' applies for the purposes of this Part as it does for the purposes of Parts Two and Three of *CRR*.

[Note: The term 'consolidated situation' is defined in Article 4(1)(47) of *CRR*]

Application of requirements on a sub-consolidated basis

2.6 An institution that is required to comply with Parts Two and Three of *CRR* on a sub-consolidated basis, shall comply with this Part on the same basis.

[Note: This rule sets out Article 11(6) of *CRR* that it applies to this Part]

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

3 ORGANISATIONAL STRUCTURE AND CONTROL MECHANISMS

3.1 A *CRR consolidation entity* and an institution shall set up a proper organisational structure and appropriate internal control mechanisms in order to ensure that the data required for consolidation for the purposes of this Part are duly processed and forwarded.

[Note: Rule 3.1 sets out an equivalent provision to the second sentence of Article 11(1) of *CRR* that applies to this Part]

3.2 A *CRR consolidation entity* and an institution shall ensure that a subsidiary not subject to this Part implements arrangements, processes and mechanisms to ensure proper consolidation for the purposes of this Part.

[Note: Rule 3.2 sets out an equivalent provision to the third sentence of Article 11(1) of *CRR* that applies to this Part]

4 OWN FUNDS REQUIREMENTS FOR POSITION RISK (PART THREE, TITLE IV, CHAPTER TWO)

SECTION 1 GENERAL PROVISIONS AND SPECIFIC INSTRUMENTS

ARTICLE 326 OWN FUNDS REQUIREMENTS FOR POSITION RISK

1. An institution's own funds requirement for position risk shall be the sum of the own funds requirements for the general and specific risk of its positions in debt and equity instruments. Securitisation positions in the trading book shall be treated as debt instruments.

[Note: This rule corresponds to Article 326 of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 327 NETTING

1. An institution shall calculate its net position in instruments on the basis that the absolute value of the excess of an institution's long (short) positions over its short (long) positions in the same equity, debt and convertible issues and identical financial futures, options, warrants and covered warrants shall be its net position in each of those different instruments. In calculating the net position, an institution shall treat positions in derivative instruments as laid down in Articles 328 to 330. An institution shall disregard its holdings of its own debt instruments in calculating specific risk capital requirements under Article 336.
2. An institution shall not net between a *convertible bond* and an offsetting position in the instrument underlying it, unless the institution:
 - (a) treats the *convertible bond* as a position in the equity into which it converts; and
 - (b) adjusts its own funds requirement for the general and specific risk in its equity instruments by making:
 - (i) an addition equal to the current value of any loss which the institution would make if it did convert to equity; or
 - (ii) a deduction equal to the current value of any profit which the institution would make if it did convert to equity (subject to a maximum deduction equal to the own funds requirements on the notional position underlying the *convertible bond*).
3. An institution shall convert all net positions, irrespective of their signs, on a daily basis into the institution's reporting currency at the prevailing spot exchange rate before their aggregation.

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

[Note: This rule corresponds to Article 327 of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 328 INTEREST RATE FUTURES AND FORWARDS

1. An institution shall treat interest rate futures, *FRAs* and forward commitments to buy or sell debt instruments as combinations of long and short positions. Thus an institution shall treat a long interest rate futures position as a combination of a borrowing maturing on the delivery date of the futures contract and a holding of an asset with maturity date equal to that of the instrument or notional position underlying the futures contract in question. Similarly an institution shall treat a sold *FRA* as a long position with a maturity date equal to the settlement date plus the contract period, and a short position with maturity equal to the settlement date. Both the borrowing and the asset holding shall be included in the first category set out in Table 1 in Article 336 in order to calculate the own funds requirement for specific risk for interest rate futures and *FRAs*. A forward commitment to buy a debt instrument shall be treated as a combination of a borrowing maturing on the delivery date and a long (spot) position in the debt instrument itself. The borrowing shall be included in the first category set out in Table 1 in Article 336 for purposes of specific risk, and the debt instrument under whichever column is appropriate for it in the same table.
2. For the purposes of this Article, 'long position' means a position in which an institution has fixed the interest rate it will receive at some time in the future, and 'short position' means a position in which it has fixed the interest rate it will pay at some time in the future.

[Note: This rule corresponds to Article 328 of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 329 OPTIONS AND WARRANTS

1. An institution shall treat options and warrants on interest rates, debt instruments, equities, equity indices, financial futures, swaps and foreign currencies as if they were positions equal in value to the amount of the underlying instrument to which the option refers, multiplied by its delta for the purposes of Articles 326 to 350. The institution may net off the latter positions against any offsetting positions in the identical underlying securities or derivatives. The institution shall use the delta of the exchange concerned.

For OTC-options, or where the delta is not available from the exchange concerned, an institution may with the prior permission of the *PRA* calculate the delta itself using a model to the extent and subject to any modifications set out in the permission if, on applying for such permission, it is able to demonstrate to the satisfaction of the *PRA* that it is using an appropriate model which estimates the rate of change of the option's or warrant's value with respect to small changes in the market price of the underlying.

An institution that has been granted the permission set out in the second sub-paragraph shall comply with the requirements set out in that second sub-paragraph.

[Note: This is a permission created under sections 144G(2) and 192XC of *FSMA* to which Part 8 of the *Capital Requirements Regulations* applies]

2. An institution shall adequately reflect other risks, apart from the delta risk, associated with options in the own funds requirements in accordance with Article 352a.
3. [Note: Provision left blank]

[Note: Paragraphs 1 and 2 of this rule correspond to paragraphs 1 and 2 of Article 329 of *CRR* as it applied immediately before revocation by the *Treasury*]

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

ARTICLE 330 SWAPS

1. An institution shall treat swaps for interest rate risk purposes on the same basis as on-balance-sheet instruments. Therefore, an institution shall treat an interest rate swap under which an institution receives floating-rate interest and pays fixed-rate interest as equivalent to a long position in a floating-rate instrument of maturity equivalent to the period until the next interest fixing and a short position in a fixed-rate instrument with the same maturity as the swap itself.

[Note: This rule corresponds to Article 330 of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 331 INTEREST RATE RISK ON DERIVATIVE INSTRUMENTS

1. An institution which marks to market and manages the interest rate risk on the derivative instruments covered in Articles 328 to 330 on a discounted-cash-flow basis may with the prior permission of the *PRA* use sensitivity models to calculate the positions referred to in those Articles and may use them for any bond which is amortised over its residual life rather than via one final repayment of principal to the extent and subject to any modifications set out in the permission if, on applying for such permission, it is able to demonstrate to the satisfaction of the *PRA* that the models it uses:
 - (a) generate positions which have the same sensitivity to interest rate changes as the underlying cash flows; and
 - (b) assesses sensitivity with reference to independent movements in sample rates across the yield curve, with at least one sensitivity point in each of the maturity bands set out in Table 2 in Article 339.

An institution that has been permitted to use sensitivity models as set out in the first sub-paragraph shall:

- (i) include the positions in the calculation of own funds requirements for general risk of debt instruments; and
- (ii) comply with the requirements set out in that first sub-paragraph.

[Note: This is a permission created under sections 144G(2) and 192XC of *FSMA* to which Part 8 of the *Capital Requirements Regulations* applies]

2. An institution which does not use models under paragraph 1 may treat as fully offsetting any positions in derivative instruments covered in Articles 328 to 330 which meet the following conditions at least:
 - (a) the positions are of the same value and denominated in the same currency;
 - (b) the reference rate (for floating-rate positions) or coupon (for fixed-rate positions) is closely matched; and
 - (c) the next interest-fixing date or, for fixed coupon positions, residual maturity corresponds with the following limits:
 - (i) less than one month hence: same day;
 - (ii) between one month and one year hence: within seven days;
 - (iii) over one year hence: within 30 days.

[Note: This rule corresponds to Article 331 of *CRR* as it applied immediately before revocation by the *Treasury*]

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

ARTICLE 332 CREDIT DERIVATIVES

1. When an institution that is the party who assumes the credit risk (the 'protection seller') calculates an own funds requirement for general and specific risk, unless specified differently, that institution shall use the notional amount of the credit derivative contract. Notwithstanding the first sentence, the institution may elect to replace the notional value by the notional value plus the net market value change of the credit derivative since trade inception, a net downward change from the protection seller's perspective carrying a negative sign. For the purpose of calculating the specific risk charge, other than for total return swaps, the institution shall apply the maturity of the credit derivative contract, rather than the maturity of the obligation. An institution shall determine positions as follows:
 - (a) a total return swap creates a long position in the general risk of the reference obligation and a short position in the general risk of a government bond with a maturity equivalent to the period until the next interest fixing and which is assigned a 0% risk weight under the Credit Risk: Standardised Approach (CRR) Part. It also creates a long position in the specific risk of the reference obligation;
 - (b) a credit default swap does not create a position for general risk. For the purposes of specific risk, the institution shall record a synthetic long position in an obligation of the reference entity, unless the derivative is rated externally and meets the conditions for a qualifying debt item, in which case a long position in the derivative is recorded. If premium or interest payments are due under the product, these cash flows shall be represented as notional positions in government bonds;
 - (c) a single name credit linked note creates a long position in the general risk of the note itself, as an interest rate product. For the purpose of specific risk, a synthetic long position is created in an obligation of the reference entity. An additional long position is created in the issuer of the note. Where the credit linked note has an external rating and meets the conditions for a qualifying debt item, a single long position with the specific risk of the note need only be recorded;
 - (d) in addition to a long position in the specific risk of the issuer of the note, a multiple name credit linked note providing proportional protection creates a position in each reference entity, with the total notional amount of the contract assigned across the positions according to the proportion of the total notional amount that each exposure to a reference entity represents. Where more than one obligation of a reference entity can be selected, the obligation with the highest risk weighting determines the specific risk;
 - (e) a first-asset-to-default credit derivative creates a position for the notional amount in an obligation of each reference entity. If the size of the maximum credit event payment is lower than the own funds requirement under the method in the first sentence of this point, the maximum payment amount may be taken as the own funds requirement for specific risk;
 - (f) an n-th-asset-to-default credit derivative creates a position for the notional amount in an obligation of each reference entity less the n-1 reference entities with the lowest specific risk own funds requirement. If the size of the maximum credit event payment is lower than the own funds requirement under the method in the first sentence of this point, this amount may be taken as the own funds requirement for specific risk. Where an n-th-to-default credit derivative is externally rated, the protection seller shall calculate the specific risk own funds requirement using the rating of the derivative and apply the respective securitisation risk weights as applicable.
2. An institution which is the party who transfers credit risk (the 'protection buyer'), shall determine the positions as the mirror principle of the protection seller, with the exception of a credit linked

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note (which entails no short position in the issuer). When calculating the own funds requirement for the protection buyer, the institution shall use the notional amount of the credit derivative contract. Notwithstanding the first sentence, an institution may elect to replace the notional value by the notional value plus the net market value change of the credit derivative since trade inception, a net downward change from the protection seller's perspective carrying a negative sign. If at a given moment there is a call option in combination with a step-up, the institution shall treat such moment as the maturity of the protection.

3. [Note: Provision left blank]

[Note: This rule corresponds to Article 332 of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 333 SECURITIES SOLD UNDER A REPURCHASE AGREEMENT OR LENT

1. An institution that is the transferor of securities or guaranteed rights relating to title to securities in a repurchase agreement and the lender of securities in a securities lending shall include those securities in the calculation of its own funds requirement under Articles 326 to 350 provided that such securities are trading book positions.

[Note: This rule corresponds to Article 333 of *CRR* as it applied immediately before revocation by the *Treasury*]

SECTION 2 DEBT INSTRUMENTS

ARTICLE 334 NET POSITIONS IN DEBT INSTRUMENTS

1. An institution shall classify net positions according to the currency in which they are denominated and shall calculate the own funds requirement for general and specific risk in each individual currency separately.

[Note: This rule corresponds to Article 334 of *CRR* as it applied immediately before revocation by the *Treasury*]

SUBSECTION 1 SPECIFIC RISK

ARTICLE 335 CAP ON THE OWN FUNDS REQUIREMENT FOR A NET POSITION

1. An institution may cap the own funds requirement for specific risk of a net position in a debt instrument at the maximum possible default-risk related loss. For a short position, that limit may be calculated as a change in value due to the instrument or, where relevant, the underlying names immediately becoming default risk-free.

[Note: This rule corresponds to Article 335 of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 336 OWN FUNDS REQUIREMENT FOR NON-SECURITISATION DEBT INSTRUMENTS

1. An institution shall assign its net positions in the trading book in instruments that are not securitisation positions as calculated in accordance with Article 327 to the appropriate categories in Table 1 of this Article on the basis of their issuer or obligor, external or internal credit assessment, and residual maturity, and then multiply them by the weightings shown in that table. It shall sum its weighted positions resulting from the application of this Article regardless of whether they are long or short in order to calculate its own funds requirement against specific risk.

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

Table 1

Categories	Specific risk own funds requirement
Debt securities which would receive a 0% risk weight under the Credit Risk: Standardised Approach (CRR) Part.	0%
Debt securities which would receive a risk weight greater than 0% and less than or equal to 50% the Credit Risk: Standardised Approach (CRR) Part.	0.25% (residual term to final maturity six months or less) 1.00% (residual term to final maturity greater than six months and up to and including 24 months) 1.60% (residual term to maturity exceeding 24 months)
Debt securities which would receive a risk weight greater than 50% and less than or equal to 100% under the Credit Risk: Standardised Approach (CRR) Part.	8%
Debt securities which would receive risk weight greater than 100% under the Credit Risk: Standardised Approach (CRR) Part.	12%

2. For institutions which apply the approach set out in the Credit Risk: Internal Ratings Based Approach (CRR) Part to the exposure class of which the issuer of the debt instrument forms part, to qualify for a risk weight as set out in paragraph 1, the issuer of the exposure shall have an internal rating with a Probability of Default (PD) equivalent to or lower than that associated with the appropriate credit quality step under the Credit Risk: Standardised Approach (CRR) Part.
3. Institutions may calculate the specific risk requirements for any bonds that qualify for a 10% risk weight in accordance with the treatment set out in paragraphs 4, 5 and 6 of Credit Risk: Standardised Approach (CRR) Part Article 129 as half of the applicable specific risk own funds requirement for the second category in Table 1 of this Article.
4. Other qualifying items are:
 - (a) long and short positions in assets for which a credit assessment by a nominated ECAI is not available and which meet all of the following conditions:
 - (i) they are considered by the institution concerned to be sufficiently liquid;
 - (ii) their investment quality is, according to the institution's own discretion, at least equivalent to that of the assets referred to under Table 1 of this Article, second row; and
 - (iii) they are listed on at least one regulated market in the *United Kingdom* or on a stock exchange in a *third country* provided that the exchange is recognised by the competent authorities of the *United Kingdom*;
 - (b) long and short positions in assets issued by institutions subject to the own funds requirements set out in *CRR* and *CRR rules* which are considered by the institution concerned to be sufficiently liquid and whose investment quality is, according to the institution's own discretion, at least equivalent to that of the assets referred to under Table 1 of this Article, second row; and

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- (c) securities issued by institutions that are deemed to be of equivalent, or higher, credit quality than those associated with credit quality step 2 of exposures to institutions and that are subject to supervisory and regulatory arrangements comparable to those applicable to institutions under *CRR and CRR rules* and Directive 2013/36/EU UK law.

Institutions that make use of point (a) or (b) shall have a documented methodology in place to assess whether assets meet the requirements in those points and shall notify this methodology to the *PRA*.

[Note: This rule corresponds to Article 336 of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 337 OWN FUNDS REQUIREMENT FOR SECURITISATION INSTRUMENTS

1. For instruments in the trading book that are securitisation positions, an institution shall weight the net positions as calculated in accordance with paragraph 1 of Article 327 with 8% of the risk weight the institution would apply to the position in its non-trading book according to Section 3 of Chapter 5 of Title II of Part 3 of *CRR*.
2. [Note: Provision left blank]
3. For securitisation positions that are subject to an additional risk weight in accordance with paragraph 6 of Article 247 of *CRR*, an institution shall apply 8% of the total risk weight.
4. An institution shall sum its weighted positions resulting from the application of paragraphs 1, 2 and 3 regardless of whether they are long or short, in order to calculate its own funds requirement against specific risk.
5. Where an originator institution of a traditional securitisation does not meet the conditions for significant risk transfer set out in Article 244 of *CRR*, the originator institution shall include the exposures underlying the securitisation in its calculation of own funds requirement as if those exposures had not been securitised.

Where an originator institution of a synthetic securitisation does not meet the conditions for significant risk transfer set out Article 245 of *CRR*, the originator institution shall include the exposures underlying the securitisation in its calculation of own funds requirements as if those exposures had not been securitised and shall ignore the effect of the synthetic securitisation for credit protection purposes.

[Note: Paragraphs 1, 3, 4 and 5 of this rule correspond to paragraphs 1, 3, 4 and 5 of Article 337 of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 338 OWN FUNDS REQUIREMENTS FOR THE CORRELATION TRADING PORTFOLIO

[Note: Provision left blank]

SUBSECTION 2 GENERAL RISK

ARTICLE 339 MATURITY-BASED CALCULATION OF GENERAL RISK

1. In order to calculate own funds requirements against general risk an institution shall assign a risk weight to all positions according to maturity as explained in paragraph 2 in order to compute the amount of own funds required against them. This requirement shall be reduced when a weighted position is held alongside an opposite weighted position within the same maturity band. A reduction in the requirement shall also be made when the opposite weighted positions fall into different maturity bands, with the size of this reduction depending both on

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whether the two positions fall into the same zone, or not, and on the particular zones they fall into.

2. An institution shall assign its net positions to the appropriate maturity bands in column 2 or 3, as appropriate, in Table 2 in paragraph 4. It shall do so on the basis of residual maturity in the case of fixed-rate instruments and on the basis of the period until the interest rate is next set in the case of instruments on which the interest rate is variable before final maturity. It shall also distinguish between debt instruments with a coupon of 3% or more and those with a coupon of less than 3% and thus allocate them to column 2 or column 3 in Table 2. It shall then multiply each of them by the weighing for the maturity band in question in column 4 in Table 2.
3. An institution shall then work out the sum of the weighted long positions and the sum of the weighted short positions in each maturity band. The amount of the former which are matched by the latter in a given maturity band shall be the matched weighted position in that band, while the residual long or short position shall be the unmatched weighted position for the same band. The total of the matched weighted positions in all bands shall then be calculated.
4. An institution shall compute the totals of the unmatched weighted long positions for the bands included in each of the zones in Table 2 in order to derive the unmatched weighted long position for each zone. Similarly, the sum of the unmatched weighted short positions for each band in a particular zone shall be summed to compute the unmatched weighted short position for that zone. That part of the unmatched weighted long position for a given zone that is matched by the unmatched weighted short position for the same zone shall be the matched weighted position for that zone. That part of the unmatched weighted long or unmatched weighted short position for a zone that cannot be thus matched shall be the unmatched weighted position for that zone.

Table 2

Zone	Maturity band		Weighting (in %)	Assumed interest rate change (in %)
	Coupon of 3% or more	Coupon of less than 3%		
One	0 ≤ 1 month	0 ≤ 1 month	0.00	—
	> 1 ≤ 3 months	> 1 ≤ 3 months	0.20	1.00
	> 3 ≤ 6 months	> 3 ≤ 6 months	0.40	1.00
	> 6 ≤ 12 months	> 6 ≤ 12 months	0.70	1.00
Two	> 1 ≤ 2 years	> 1.0 ≤ 1.9 years	1.25	0.90
	> 2 ≤ 3 years	> 1.9 ≤ 2.8 years	1.75	0.80
	> 3 ≤ 4 years	> 2.8 ≤ 3.6 years	2.25	0.75
Three	> 4 ≤ 5 years	> 3.6 ≤ 4.3 years	2.75	0.75
	> 5 ≤ 7 years	> 4.3 ≤ 5.7 years	3.25	0.70
	> 7 ≤ 10 years	> 5.7 ≤ 7.3 years	3.75	0.65
	> 10 ≤ 15 years	> 7.3 ≤ 9.3 years	4.50	0.60
	> 15 ≤ 20 years	> 9.3 ≤ 10.6 years	5.25	0.60

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	> 20 years	> 10.6 ≤ 12.0 years	6.00	0.60
		> 12.0 ≤ 20.0 years	8.00	0.60
		> 20 years	12.50	0.60

5. The amount of the unmatched weighted long or short position in zone one which is matched by the unmatched weighted short or long position in zone two shall then be the matched weighted position between zones one and two. The same calculation shall then be undertaken with regard to that part of the unmatched weighted position in zone two which is left over and the unmatched weighted position in zone three in order to calculate the matched weighted position between zones two and three.
6. An institution may reverse the order in paragraph 5 so as to calculate the matched weighted position between zones two and three before calculating that position between zones one and two.
7. The remainder of the unmatched weighted position in zone one shall then be matched with what remains of that for zone three after the latter's matching with zone two in order to derive the matched weighted position between zones one and three.
8. Residual positions, following the three separate matching calculations in paragraphs 5, 6 and 7 shall be summed.
9. An institution shall calculate its own funds requirement as the sum of:
 - (a) 10% of the sum of the matched weighted positions in all maturity bands;
 - (b) 40% of the matched weighted position in zone one;
 - (c) 30% of the matched weighted position in zone two;
 - (d) 30% of the matched weighted position in zone three;
 - (e) 40% of the matched weighted position between zones one and two and between zones two and three;
 - (f) 150% of the matched weighted position between zones one and three; and
 - (g) 100% of the residual unmatched weighted positions.

[Note: This rule corresponds to Article 339 of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 340 DURATION-BASED CALCULATION OF GENERAL RISK

1. An institution may use an approach for calculating the own funds requirement for the general risk on debt instruments which reflects duration, instead of the approach set out in Article 339, provided that the institution does so on a consistent basis.
2. Under the duration-based approach referred to in paragraph 1, an institution shall take the market value of each fixed-rate debt instrument and hence calculate its yield to maturity, which is implied discount rate for that instrument. In the case of floating-rate instruments, the institution shall take the market value of each instrument and hence calculate its yield on the assumption that the principal is due when the interest rate can next be changed.
3. An institution shall then calculate the modified duration of each debt instrument on the basis of the following formula:

$$\text{modified duration} = \frac{D}{1 + R}$$

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where:

D = duration calculated according to the following formula:

$$D = \frac{\sum_{t=1}^M \frac{t \times C_t}{(1-R)^t}}{\sum_{t=1}^M \frac{C_t}{(1-R)^t}}$$

where:

R = yield to maturity;

C_t = cash payment in time t ;

M = total maturity.

4. An institution shall then allocate each debt instrument to the appropriate zone in Table 3. It shall do so on the basis of the modified duration of each instrument.

Table 3

Zone	Modified duration (in years)	Assumed interest (change in %)
One	$> 0 \leq 1.0$	1.0
Two	$> 1.0 \leq 3.6$	0.85
Three	> 3.6	0.7

5. An institution shall then calculate the duration-weighted position for each instrument by multiplying its market price by its modified duration and by the assumed interest rate change for an instrument with that particular modified duration (see column 3 in Table 3).
6. An institution shall calculate its duration-weighted long and its duration-weighted short positions within each zone. The amount of the former which are matched by the latter within each zone shall be the matched duration-weighted position for that zone.

The institution shall then calculate the unmatched duration-weighted positions for each zone. It shall then follow the procedures laid down for unmatched weighted positions in paragraphs 5 to 8 of Article 339.
7. An institution shall calculate its own funds requirement as the sum of the following:
 - (a) 2% of the matched duration-weighted position for each zone;
 - (b) 40% of the matched duration-weighted positions between zones one and two and between zones two and three;
 - (c) 150% of the matched duration-weighted position between zones one and three; and
 - (d) 100% of the residual unmatched duration-weighted positions.

[Note: This rule corresponds to Article 340 of *CRR* as it applied immediately before revocation by the Treasury]

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SECTION 3 EQUITIES

ARTICLE 341 NET POSITIONS IN EQUITY INSTRUMENTS

1. An institution shall separately sum all its net long positions and all its net short positions in accordance with Article 327. The sum of the absolute values of the two figures shall be its overall gross position.
2. An institution shall calculate, separately for each market, the difference between the sum of the net long and the net short positions. The sum of the absolute values of those differences shall be its overall net position.
3. For the purposes of paragraph 2, the term 'market' shall mean all equities listed in stock markets located within a national jurisdiction.

[Note: This rule corresponds to Article 341(1) and (2) of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 342 SPECIFIC RISK OF EQUITY INSTRUMENTS

1. An institution shall multiply its overall gross position by 8% in order to calculate its own funds requirement against specific risk.

[Note: This rule corresponds to Article 342 of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 343 GENERAL RISK OF EQUITY INSTRUMENTS

1. An institution shall multiply its overall net position by 8% in order to calculate its own funds requirement against general risk.

[Note: This rule corresponds to Article 343 of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 344 STOCK INDICES

1. For the purposes of paragraph 4, an institution may only determine that the exchange-traded index is appropriately diversified if the index meets the following criteria:
 - (a) Number:
 - (i) A diversified index shall contain at least 20 equities;
 - (b) Concentration:
 - (i) By equity: no single equity shall represent more than 25% of the total index;
 - (ii) By group of equities: 10% of the largest equities (rounded up to the next whole number) shall represent less than 60% of the total index;
 - (c) Diversification
 - (i) By geography: the index shall encompass equities from at least one national market; no regional indices shall be recognised as appropriately diversified;
 - (ii) By industry: the index shall comprise equities from at least four of the following industries:
 - (1) Oil and Gas
 - (2) Basic Materials

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- (3) Industrials
 - (4) Consumer Goods
 - (5) Health Care
 - (6) Consumer Services
 - (7) Telecommunications
 - (8) Utilities
 - (9) Financials
 - (10) Technology
2. [Note: Provision left blank]
3. An institution may break down stock-index futures, the delta-weighted equivalents of options in stock-index futures and stock indices (collectively referred to hereafter as 'stock-index futures'), into positions in each of their constituent equities. The institution may treat these positions as underlying positions in the equities in question, and may, be netted against opposite positions in the underlying equities themselves. The institution shall notify the *PRA* of the use they make of that treatment.
4. Where a stock-index future is not broken down into its underlying positions, an institution shall treat it as if it were an individual equity. However, the institution may ignore the specific risk on this individual equity if the stock-index future in question is exchange traded and represents a relevant appropriately diversified index.

[Note: Paragraphs 3 and 4 of this rule correspond to paragraphs 3 and 4 of Article 344 of *CRR* as it applied immediately before revocation by the *Treasury*]

SECTION 4 UNDERWRITING

ARTICLE 345 REDUCTION OF NET POSITIONS

1. In the case of the underwriting of debt and equity instruments, an institution may use the following procedure in calculating its own funds requirements. An institution shall first calculate the net positions by deducting the underwriting positions which are subscribed or sub-underwritten by third parties on the basis of formal agreements. An institution shall then reduce the net positions by the reduction factors in Table 4 and calculate its own funds requirements using the reduced underwriting positions.

Table 4

Working day 0	100%
Working day 1	90%
Working days 2 to 3	75%
Working day 4	50%
Working day 5	25%
After working day 5	0%

'Working day 0' shall be the working day on which the institution becomes unconditionally committed to accepting a known quantity of securities at an agreed price.

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2. An institution shall notify the *PRA* to the extent it makes use of the process set out in paragraph 1.

[Note: This rule corresponds to Article 345 of *CRR* as it applied immediately before revocation by the *Treasury*]

SECTION 5 SPECIFIC RISK OWN FUND REQUIREMENTS FOR POSITIONS HEDGED BY CREDIT DERIVATIVES

ARTICLE 346 ALLOWANCES FOR HEDGES BY CREDIT REDUCTION OF NET POSITIONS

1. An institution may give allowance for hedges provided by credit derivatives, in accordance with the principles set out in paragraphs 2 to 6.
2. An institution shall treat the position in the credit derivative as one 'leg' and the hedged position that has the same nominal, or, where applicable, notional amount, as the other 'leg'.
3. An institution shall give full allowance when the values of the two legs always move in the opposite direction and broadly to the same extent. This will be the case in the following situations:
 - (a) the two legs consist of completely identical instruments;
 - (b) a long cash position is hedged by a total rate of return swap (or vice versa) and there is an exact match between the reference obligation and the underlying exposure (i.e. the cash position). The maturity of the swap itself may be different from that of the underlying exposure.

In these situations, a specific risk own funds requirement shall not be applied to either side of the position.
4. An institution shall apply an 80% offset when the values of the two legs always move in the opposite direction and where there is an exact match in terms of the reference obligation, the maturity of both the reference obligation and the credit derivative, and the currency of the underlying exposure. In addition, key features of the credit derivative contract shall not cause the price movement of the credit derivative to materially deviate from the price movements of the cash position. To the extent that the transaction transfers risk, an institution shall apply an 80% specific risk offset to the side of the transaction with the higher own funds requirement, while the specific risk requirements on the other side shall be zero.
5. An institution shall give partial allowances, absent the situations in paragraphs 3 and 4, in the following situations:
 - (a) the position falls under point (b) of paragraph 3 but there is an asset mismatch between the reference obligation and the underlying exposure. However, the positions meet the following requirements:
 - (i) the reference obligation ranks *pari passu* with or is junior to the underlying obligation; and
 - (ii) the underlying obligation and reference obligation share the same obligor and have legally enforceable cross-default or cross-acceleration clauses;
 - (b) the position falls under point (a) of paragraph 3 or paragraph 4 but there is a currency or maturity mismatch between the credit protection and the underlying asset. Such currency mismatch shall be included in the own funds requirement for foreign exchange risk;

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- (c) the position falls under paragraph 4 but there is an asset mismatch between the cash position and the credit derivative. However, the underlying asset is included in the (deliverable) obligations in the credit derivative documentation.

In order to give partial allowance, rather than adding the specific risk own funds requirements for each side of the transaction, the institution shall apply only the higher of the two own funds requirements.

6. In all situations not falling under paragraphs 3 to 5, an institution shall calculate an own funds requirement for specific risk for both sides of the positions separately.

[Note: This rule corresponds to Article 346 of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 347 ALLOWANCE FOR HEDGES BY FIRST AND NTH-TO DEFAULT CREDIT DERIVATIVES

1. In the case of first-to-default credit derivatives and nth-to-default credit derivatives, an institution shall apply the following treatment for the purposes of giving the allowance in accordance with Article 346:
- (a) where an institution obtains credit protection for a number of reference entities underlying a credit derivative under the terms that the first default among the assets shall trigger payment and that this credit event shall terminate the contract, the institution may offset specific risk for the reference entity to which the lowest specific risk percentage charge among the underlying reference entities applies in accordance with Table 1 in Article 336;
- (b) where the nth default among the exposures triggers payment under the credit protection, the protection buyer may only offset specific risk if protection has also been obtained for defaults 1 to n-1 or when n-1 defaults have already occurred. In such cases, the methodology set out in point (a) for first-to-default credit derivatives shall be followed appropriately amended for nth-to-default products.

[Note: This rule corresponds to Article 347 of *CRR* as it applied immediately before revocation by the *Treasury*]

SECTION 6 OWN FUNDS REQUIREMENTS FOR CIUS

ARTICLE 348 OWN FUNDS REQUIREMENTS FOR CIUS

1. Without prejudice to other provisions in this Section (including, without limitation, paragraph 3 below), an institution must hold an own funds requirement for position risk for positions in CIUs, comprising specific and general risk, of 32%. Without prejudice to Article 353, taken together with the amended gold treatment set out in paragraph 4 of Article 352, and without prejudice to paragraph 3 below, an institution must hold an own funds requirement for position risk for positions in CIUs, comprising specific and general risk, and foreign-exchange risk of 40%.
2. Unless otherwise provided for in Article 350, an institution may not net between the underlying investments of a CIU and other positions held by the institution.
3. An institution shall treat a position in a CIU which is also a closed-ended investment fund with a premium listing in compliance with the listing rules as an equity position in accordance with this Part. For the purposes of this paragraph, the terms 'closed-ended investment fund', 'listing rules' and 'premium listing' shall have the meaning given to such terms in the FCA Handbook.

[Note: This rule corresponds to Article 348 of *CRR* as it applied immediately before revocation by the *Treasury*]

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

ARTICLE 349 GENERAL CRITERIA FOR CIUS

1. An institution may apply the approach set out in Article 350 to a position in a CIU, where all the following conditions are met:
 - (a) the CIU's prospectus or equivalent document includes all of the following:
 - (i) the categories of assets in which the CIU is authorised to invest;
 - (ii) where investment limits apply, the relative limits and the methodologies to calculate them;
 - (iii) where leverage is allowed, the maximum level of leverage; and
 - (iv) where concluding OTC financial derivatives transactions or repurchase transactions or securities borrowing or lending is allowed, a policy to limit counterparty risk arising from these transactions;
 - (b) the business of the CIU is reported in half-yearly and annual reports to enable an assessment to be made of the assets and liabilities, income and operations over the reporting period;
 - (c) the shares or units of the CIU are redeemable in cash, out of the undertaking's assets, on a daily basis at the request of the unit holder;
 - (d) investments in the CIU are segregated from the assets of the CIU manager;
 - (e) there are adequate risk assessment of the CIU, by the investing institution; and
 - (f) CIUs are managed by persons supervised in accordance with *United Kingdom* legislation which implemented Directive 2009/65/EC or equivalent legislation.

[Note: This rule corresponds to Article 349 of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 350 SPECIFIC METHODS FOR CIUS

1. Where an institution is aware of the underlying investments of the CIU on a daily basis, the institution may look through to those underlying investments in order to calculate the own funds requirements for position risk, comprising specific and general risk. Under such an approach, an institution shall treat positions in CIUs as positions in the underlying investments of the CIU. Netting shall be permitted between positions in the underlying investments of the CIU and other positions held by the institution, provided that the institution holds a sufficient quantity of shares or units to allow for redemption/creation in exchange for the underlying investments.
2. An institution may calculate the own funds requirements for position risk, comprising specific and general risk, for positions in CIUs by assuming positions representing those necessary to replicate the composition and performance of the externally generated index or fixed basket of equities or debt securities referred to in point (a), subject to the following conditions:
 - (a) the purpose of the CIU's mandate is to replicate the composition and performance of an externally generated index or fixed basket of equities or debt securities; and
 - (b) a minimum correlation coefficient between daily returns on the CIU and the index or basket of equities or debt securities it tracks of 0.9 can be clearly established over a minimum period of six months.
3. Where the institution is not aware of the underlying investments of the CIU on a daily basis, the institution may calculate the own funds requirements for position risk, comprising specific and general risk, subject to the following conditions:

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- (a) it will be assumed that the CIU first invests to the maximum extent allowed under its mandate in the asset classes attracting the highest own funds requirement for specific and general risk separately, and then continues making investments in descending order until the maximum total investment limit is reached. The position in the CIU will be treated as a direct holding in the assumed position;
 - (b) institutions shall take account of the maximum indirect exposure that they could achieve by taking leveraged positions through the CIU when calculating their own funds requirement for specific and general risk separately, by proportionally increasing the position in the CIU up to the maximum exposure to the underlying investment items resulting from the mandate; and
 - (c) if the own funds requirement for specific and general risk together in accordance with this paragraph exceed that set out in paragraph 1 of Article 348 the own funds requirement shall be capped at that level.
4. An institution may rely on the following third parties to calculate and report own funds requirements for position risk for positions in CIUs falling under paragraphs 1 to 3, in accordance with the methods set out in Articles 326 to 350:
- (a) the depository of the CIU, provided that the CIU exclusively invests in securities and deposits all securities at this depository;
 - (b) for other CIUs, the CIU management company, provided that the CIU management company is managed by a company that is subject to supervision in the *United Kingdom* or, in the case of *third country* CIU, where the CIU is established in a *third country* that carries out activities similar to those carried out by a CIU and which is subject to supervision pursuant to legislation of a *third country* which applies supervisory and regulatory requirements which are at least equivalent to those applied in the *UK* to *UK* CIUs.

An institution shall ensure the correctness of the calculation is confirmed by an external auditor.

[Note: This rule corresponds to Article 350 of *CRR* as it applied immediately before revocation by the *Treasury*]

5 OWN FUNDS REQUIREMENTS FOR FOREIGN-EXCHANGE RISK (PART THREE, TITLE IV CRR, CHAPTER THREE)

ARTICLE 351 DE MINIMIS AND WEIGHTING FOR FOREIGN EXCHANGE FACTORS

1. If the sum of an institution's overall net foreign-exchange position and its net gold position, calculated in accordance with the procedure set out in Article 352, including for any foreign exchange and gold positions for which own funds requirements are calculated using an internal model, exceeds 2% of its total own funds, the institution shall calculate an own funds requirement for foreign exchange risk. The own funds requirement for foreign exchange risk shall be the sum of its overall net foreign-exchange position and its net gold position in the reporting currency, multiplied by 8%.

[Note: This rule corresponds to Article 351 of *CRR* as it applied immediately before revocation by the *Treasury*]

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

ARTICLE 352 CALCULATION OF THE OVERALL NET FOREIGN EXCHANGE POSITION

1. An institution's net open position in each currency (including the reporting currency) and in gold shall be calculated as the sum of the following elements (positive or negative):
 - (a) the net spot position (i.e. all asset items less all liability items, including accrued interest, in the currency in question or, for gold, the net spot position in gold);
 - (b) the net forward position, which are all amounts to be received less all amounts to be paid under forward exchange and gold transactions, including currency and gold futures and the principal on currency swaps not included in the spot position;
 - (c) irrevocable guarantees and similar instruments that are certain to be called and likely to be irrecoverable;
 - (d) the net delta, or delta-based, equivalent of the total book of foreign-currency and gold options; and
 - (e) the market value of other options.

The delta used for purposes of point (d) shall be that of the exchange concerned. For OTC options, or where delta is not available from the exchange concerned, the institution may with the prior permission of the *PRA* calculate delta itself to the extent and subject to any modifications set out in the permission if, on applying for such permission, it is able to demonstrate to the satisfaction of the *PRA* that it is using an appropriate model which estimates the rate of change of the option's or warrant's value with respect to small changes in the market price of the underlying.

An institution that has been permitted to calculate delta itself as set out in the second sub-paragraph:

- (i) may include net future income/expenses not yet accrued but already fully hedged if it does so consistently; and
- (ii) may break down net positions in composite currencies into the component currencies in accordance with the quotas in force.

An institution that has been permitted to calculate delta itself as set out in the second sub-paragraph shall comply with the requirements set out in that second sub-paragraph.

[Note: This is a permission created under sections 144G(2) and 192XC of *FSMA* to which Part 8 of the *Capital Requirements Regulations* applies]

2. [Note: Provision left blank]
3. An institution may use the net present value when calculating the net open position in each currency and in gold provided that the institution applies this approach consistently.
4. An institution shall convert net short and long positions in each currency other than the reporting currency and the net long or short position in gold at spot rates into the reporting currency. They shall then be summed separately to form the total of the net short positions and the total of the net long positions respectively. The higher of these two totals shall be the institution's overall net foreign-exchange position.
5. An institution shall adequately reflect other risks associated with options, apart from the delta risk, in the own funds requirements in accordance with Article 352a.
6. [Note: Provision left blank]

[Note: Paragraphs 1, 3, 4 and 5 of this rule correspond to paragraphs 1, 3, 4 and 5 of Article 352 of *CRR* as applied immediately before revocation by the *Treasury*]

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

ARTICLE 352a DETERMINATION OF OWN FUNDS REQUIREMENTS FOR NON-DELTA RISK OF OPTIONS AND WARRANTS

1. An institution shall calculate their own funds requirements for market risk in relation to the non-delta risk of options or warrants as required by paragraph 2 of Article 329, paragraph 5 of Article 352 and paragraph 3 of Article 358, according to one of the following approaches:
 - (a) the simplified approach as set out in paragraphs 4 and 5;
 - (b) the delta plus approach as set out in paragraphs 6, 7 and 8; or
 - (c) the scenario approach as set out in paragraphs 9, 10 and 11.
2. When calculating own funds requirements on a consolidated basis an institution may combine the use of different approaches. On an individual basis, an institution may only combine the scenario approach and the delta plus approach subject to the conditions established in paragraphs 6 to 11.
3. For the purposes of the calculation referred to in paragraph 1, an institution shall take the following steps:
 - (a) break down baskets of options or warrants into their fundamental components;
 - (b) break down caps and floors or other options which relate to interest rates at various dates, into a chain of independent options referring to different time periods (e.g. 'caplets' and 'floorlets');
 - (c) treat options or warrants on fixed-to-floating interest rates swaps as options or warrants on the fixed interest leg of the swap; and
 - (d) treat options or warrants that relate to more than one underlying among those described in point (c) of paragraph 7, as a basket of options or warrants where each option has a single distinct underlying.

The simplified approach

4. Only an institution that exclusively purchase options and warrants may use the simplified approach set out in paragraph 5.
5. An institution shall determine its own funds requirements under the simplified approach in accordance with the following:
 - (a) an institution applying the simplified approach shall calculate the own funds requirements relative to non-delta risks of call and put options or warrants as the higher amount between zero and the difference between the following values:
 - (i) the gross amount, as described in paragraphs (b) to (e);
 - (ii) the risk weighted delta equivalent amount, which it shall calculate as the market value of the underlying instrument, multiplied by the delta and then multiplied by one of the following relevant weightings:
 - (1) for specific and general equity risk or interest rate risk, according to Articles 326 to 350;
 - (2) for commodity risk, according to Articles 355 to 361; and
 - (3) for foreign exchange risk, according to Articles 351, 352, 352a, 353 and 354;
 - (b) for options or warrants which fall under one of the following two categories, an institution shall determine the gross amount referred to in paragraph (a) according to paragraphs (c) to (d):

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- (i) where the buyer has the unconditional right to buy the underlying asset at a predetermined price at the expiration date or at any time before the expiration date, and where the seller has the obligation to fulfil the buyer's demand (e.g. 'simple call options or warrants');
 - (ii) where the buyer has the unconditional right to sell the underlying asset in the same manner as described in point (i) (e.g. 'simple put options or warrants');
- (c) an institution shall calculate the gross amount referred to in paragraph (a) as the maximum between zero and the market value of the underlying *security* multiplied by the sum of specific and general market risk own funds requirements for the underlying minus the amount of the profit, if any, resulting from the instant execution of the option (e.g. 'in the money'), where one of the following conditions is met:
- (i) the option or warrant incorporates a right to sell the underlying asset (e.g. 'long put') and is combined with holdings in the underlying asset (e.g. 'long position in the underlying instrument'); or
 - (ii) the option or warrant incorporates a right to buy the underlying asset (e.g. 'long call') and is combined with the promise to sell holdings in the underlying instrument (e.g. 'short position in the underlying asset');
- (d) where the option or warrant incorporates a right to buy the underlying asset (e.g. 'long call') or a right to sell the underlying asset (e.g. 'long put'), the gross amount referred to in paragraph (a) shall be the lesser of the following two amounts:
- (i) the market value of the underlying *security* multiplied by the sum of specific and general market risk requirements for the underlying asset; and
 - (ii) the value of the position determined by the mark-to-market method or the mark-to-model method as provided in points (b) and (c) of Article 103(1) of the Trading Book (CRR) Part (e.g. 'market value of the option or warrant');
- (e) for all types of options or warrants which do not have the characteristics referred to in paragraph (b), the gross amount referred to in paragraph (a) shall be the market value of the option or warrant.

The Delta-plus approach: overview

6. An institution shall determine own funds requirements under the Delta-plus approach in accordance with the following:
- (a) where institutions opt to apply the Delta-plus approach, for options and warrants whose gamma is a continuous function in the price of the underlying and whose vega is a continuous function in the implied volatility (e.g. 'continuous options and warrants'), the own funds requirements for non-delta risks on options or warrants shall be calculated as the sum of the following requirements:
 - (i) the own funds requirements relating to the partial derivative of delta with reference to the price of the underlying which, for bond options or warrants is the partial derivative of delta with reference to the yield-to-maturity of the underlying bond, and for swaptions is the partial derivative of the delta with reference to the swap rate;
 - (ii) the requirement relating to the first partial derivative of the value of an option or warrant, with reference to the implied volatility;
 - (b) implied volatility shall be taken to be the value of the volatility in the option or warrant pricing formula for which, given a certain pricing model and given the level of all other observable pricing parameters, the theoretical price of the option or warrant is equal to its

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market value, where 'market value' is understood in the manner described in point (d) of paragraph 5; and

- (c) the own funds requirements for non-delta risks related to non-continuous options or warrants shall be determined as follows:
 - (i) where the options or warrants have been bought, as the maximum amount between zero and the difference between the following values:
 - (1) the market value of the option or warrant, understood in the manner described in point (d) of paragraph 5; and
 - (2) the risk weighted delta equivalent amount, understood in the manner described in point (a)(ii) of paragraph 5;
 - (ii) where the options or warrants have been sold, as the maximum between zero and the difference between the following amounts:
 - (1) the relevant market value of the underlying asset, which shall be taken to be either the maximum possible payment at expiry date, if it is contractually fixed, or the market value of the underlying asset or the effective notional value if no maximum possible payment is contractually fixed; and
 - (2) the risk weighted delta equivalent amount, understood in the manner described in point (a)(ii) of paragraph 5; and
- (d) the value for gamma and vega used in the calculation of own funds requirements shall be calculated using an appropriate pricing model as referred to in Article 329(1), Article 352(1) and Article 358(3). Where either gamma or vega cannot be calculated in accordance with this point (d), the capital requirement on non-delta risks shall be calculated according to point (c) of this paragraph.

The Delta-plus approach: gamma risk

7. An institution shall determine own funds requirements for gamma risk under the Delta-plus approach in accordance with the following:
- (a) for the purposes of point (a)(i) of paragraph 6, an institution shall calculate the own funds requirements for gamma risk by a process consisting of the following sequence of steps:
 - (i) for each individual option or warrant a gamma impact shall be calculated;
 - (ii) the gamma impacts of individual options or warrants which refer to the same distinct underlying type shall be summed up; and
 - (iii) the absolute value of the sum of all of the negative values resulting from step (ii) shall provide the own funds requirements for gamma risk. Positive values resulting from step (ii) shall be disregarded;
 - (b) for the purpose of the step in point (a)(i), an institution shall calculate gamma impacts in accordance with the following formula:

$$\text{Gamma impact} = \frac{1}{2} \times \text{Gamma} \times VU^2$$

where *VU*:

- (i) for options or warrants on interest rates or bonds is equal to the assumed change in yield indicated in column 5 of Table 2 of Article 339;
- (ii) for equity options or warrants and equity indices the market value of the underlying multiplied by the weighting indicated in Article 343;

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- (iii) for foreign exchange and gold options or warrants is equal to the market value of the underlying, calculated in the reporting currency and multiplied by the weighting indicated in Article 351 or, if it meets the conditions for such approach, the weighting indicated in Article 354;
 - (iv) for commodity options or warrants is equal to the market value of the underlying, multiplied by the weighting indicated in point (a) of Article 360(1);
- (c) for the purposes of the step in paragraph (a)(ii), a distinct underlying type shall be:
- (i) for interest rates in the same currency: each maturity time band as set out in Table 2 of Article 339;
 - (ii) for equities and stock indices: each market as defined in paragraph 3 of Article 341;
 - (iii) for foreign currencies and gold: each currency pair and gold; and
 - (iv) for commodities: commodities considered identical as defined in paragraph 4 of Article 357.

The Delta-plus approach: vega risk

8. For the purposes of point (a)(ii) of paragraph 6, an institution shall calculate the own funds requirement for vega risk by a process consisting of the following sequence of steps:
- (a) for each individual option the value of vega shall be determined;
 - (b) for each individual option an assumed plus/minus 25% shift in the implied volatility shall be calculated, where implied volatility shall be understood in the manner described in point (b) of paragraph 6;
 - (c) for each individual option the vega value resulting from the step in point (a) shall be multiplied by the assumed shift in implied volatility resulting from the step in point (b);
 - (d) for each distinct underlying type, understood in the manner described in point (c) of paragraph 7, the values resulting from the step in point (c) shall be summed up; and
 - (e) the sum of absolute values resulting from the step in point (d) shall provide the total own funds requirement for vega risk.

Conditions of application of the scenario approach

9. An institution may use the scenario approach where they fulfil all of the following requirements:
- (a) it has established a risk control unit that monitors the risk of the options portfolio of the institutions and reports the results to the management;
 - (b) it has notified the *PRA* of a predefined scope of exposures to be covered by this approach consistently over time; and
 - (c) it integrates the results of the scenario approach in the internal reporting to the management of the institution.

For the purposes of point (b), an institution shall define the precise positions that are subject to the scenario approach, including the type of product or identified desk and portfolio, the distinctive risk management approach that applies to such positions, the dedicated IT application that applies to such positions, and a justification for the allocation of those positions to the scenario approach, with regard to those positions allocated to other approaches.

Definition of the scenario matrix according to the scenario approach

10. An institution shall define the scenario matrix in accordance with the following requirements:

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- (a) for each distinct underlying type, as referred to in point (c) of paragraph 7, an institution shall define a scenario matrix which contains a set of scenarios;
- (b) the first dimension of the scenario matrix shall be the price changes in the underlying above and below its current value. That range of changes shall consist of the following:
 - (i) for interest rate options or warrants, plus/minus the assumed change in interest rates set out in column 5 of Table 2 of Article 339;
 - (ii) for options or warrants on equity or equity indices, plus/minus the weighting provided in Article 343;
 - (iii) for foreign exchange and gold options or warrants, plus/minus the weighting indicated in Article 351 where appropriate, plus/minus the weighting indicated in Article 354; and
 - (iv) for commodity options (warrants), plus/minus the weighting indicated in point (a) of paragraph 1 of Article 360;
- (c) the price change scenarios in the underlying shall be defined by a grid of at least seven points which includes the current observation and divides the range indicated in paragraph (b) in equally spaced intervals;
- (d) the second dimension of the scenario matrix shall be defined by volatility changes. The range of changes in volatilities shall be between plus/minus 25% of the implied volatility, where implied volatility shall be understood as referred to in paragraph 6(b). That range shall be divided into a grid of at least three points which include a 0% change and where the range is divided into equally spaced intervals; and
- (e) the scenario matrix is determined by all possible combinations of points, as referred to in paragraphs (c) and (d). Each combination shall constitute a single scenario.

Determination of the own funds requirements according to the scenario approach

11. According to the scenario approach, an institution shall calculate the own funds requirement on non-delta risk of options or warrants through a process consisting of the following sequence of steps:
- (a) for each individual option or warrant, all the scenarios referred to in paragraph 10 shall be applied to calculate simulated net loss or gain corresponding to each scenario. That simulation shall be done using full revaluation methods, by simulating the price changes by the use of pricing models and without relying to local approximations of those models;
 - (b) for each distinct underlying type, as referred to in point (c) of paragraph 7, the values obtained as a result of the calculation in point (a) and referring to the individual scenarios, shall be aggregated;
 - (c) for each distinct underlying type as referred to in point (c) of paragraph 7, the 'relevant scenario' shall be calculated as the scenario for which the values determined in step (b) result in the largest loss, or the lowest gain if there are no losses;
 - (d) for each distinct underlying type, as referred to in point (c) of paragraph 7, the own funds requirements shall be calculated in accordance with the following formula:

$$\text{Own funds requirement} = -\min(0, PC - DE)$$

where:

PC (Price Change) = the sum of price changes of the options with the same distinct underlying type understood in the manner described in point (c) of paragraph 7 (negative sign for losses and positive sign for gains) and corresponding to the relevant scenario determined in step (c) of paragraph 11 above;

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DE = the delta effect, calculated as follows:

$$DE = ADEV \times PPCU$$

where:

ADEV (aggregated delta equivalent value) = the sum of negative or positive deltas, multiplied by the market value of the underlying of the contract, of options that have the same distinct underlying type understood in the manner described in point (c) of paragraph 7;

PPCU (percentage price change of the underlying) = the percentage price change of the underlying understood in the manner described in point (c) of paragraph 7, corresponding to the relevant scenario determined in step (c) of paragraph 11 above; and

- (e) the total own funds requirement in the case of non-delta risk of options or warrants shall be the sum of the own fund requirements obtained from the calculation referred to in step (d) for all distinct underlying types as referred to in point (c) of paragraph 7.

ARTICLE 353 FOREIGN EXCHANGE RISK OF CIUS

1. For the purposes of Article 352, an institution shall, in respect of CIUs take the actual foreign exchange positions of the CIU into account.
2. An institution may rely on the following third parties' reporting of the foreign exchange positions in the CIU:
 - (a) the depository institution of the CIU provided that the CIU exclusively invests in securities and deposits all securities at this depository institution; and
 - (b) for other CIUs, the CIU management company, provided that the CIU management company is managed by a company that is subject to supervision in the *United Kingdom* or, in the case of *third country* CIU, where the CIU is established in a *third country* that carries out activities similar to those carried out by a CIU and which is subject to supervision pursuant to legislation of a *third country* which applies supervisory and regulatory requirements which are at least equivalent to those applied in the *UK* to *UK* CIUs.

The correctness of the calculation shall be confirmed by an external auditor.

3. Where an institution is not aware of the foreign exchange positions in a CIU, it shall assume that the CIU is invested up to the maximum extent allowed under the CIU's mandate in foreign exchange and the institution shall, for trading book positions, take account of the maximum indirect exposure that it could achieve by taking leveraged positions through the CIU when calculating their own funds requirement for foreign exchange risk. To do this, the institution shall proportionally increase the position in the CIU up to the maximum exposure to the underlying investment items resulting from the investment mandate. The institution shall treat the assumed position of the CIU in foreign exchange as a separate currency according to the treatment of investments in gold, subject to the addition of the total long position to the total long open foreign exchange position and the total short position to the total short open foreign exchange position where the direction of the CIU's investment is available. The institution shall not net between such positions prior to the calculation.

[Note: This rule corresponds to Article 353 of *CRR* as it applied immediately before revocation by the *Treasury*]

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ARTICLE 354 CLOSELY CORRELATED CURRENCIES

1. An institution may provide lower own funds requirements against positions in relevant closely correlated currencies. A pair of currencies is deemed to be closely correlated only if the likelihood of a loss, calculated on the basis of daily exchange-rate data for the preceding three or five years, occurring on equal and opposite positions in such currencies over the following 10 working days, which is 4% or less of the value of the matched position in question (valued in terms of the reporting currency) has a probability of at least 99%, when an observation period of three years is used, and 95%, when an observation period of five years is used. The own-funds requirement on the matched position in two closely correlated currencies shall be 4% multiplied by the value of the matched position.
2. In calculating the requirements of Articles 351 to 354, an institution may disregard positions in currencies, which are subject to a legally binding intergovernmental agreement to limit its variation relative to other currencies covered by the same agreement. It shall calculate the matched positions in such currencies and subject them to an own funds requirement no lower than half of the maximum permissible variation laid down in the intergovernmental agreement in question in respect of the currencies concerned.
3. An institution may determine the list of currencies for which the treatment set out in paragraph 1 is available, based on the following criteria:
 - (a) daily percent currency movement shall be calculated on the basis of the following formula:
$$\% \text{ Change} = \ln(\text{exchange}_t) - \ln(\text{exchange}_{t-1})$$
where:
exchange = relevant currency pair;
 - (b) the resulting percentage shall be compared to the threshold of the maximum daily change in value within a pair of currencies of 1.265%. Any values exceeding this threshold shall be treated as breaches of the 4%, 10-day maximum loss;
 - (c) only the unmatched positions in currencies shall be incorporated into the overall net open position in accordance with paragraph 4 of Article 352.

[Note: This rule corresponds to Article 354 of *CRR* as it applied immediately before revocation by the *Treasury*]

6. OWN FUNDS REQUIREMENTS FOR COMMODITIES RISK (PART THREE, TITLE IV CRR, CHAPTER FOUR)

ARTICLE 355 CHOICE OF METHOD FOR COMMODITIES RISK

1. Subject to Articles 356 to 358, an institution shall calculate the own funds requirement for commodities risk with one of the methods set out in Articles 359, 360 or 361.

[Note: This rule corresponds to Article 355 of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 356 ANCILLARY COMMODITIES BUSINESS

1. An institution with ancillary agricultural commodities business may determine the own funds requirements for their physical commodity stock at the end of each year for the following year where all of the following conditions are met:

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- (a) at any time of the year it holds own funds for this risk which are not lower than the average own funds requirement for that risk estimated on a conservative basis for the coming year;
 - (b) it estimates on a conservative basis the expected volatility for the figure calculated under point (a);
 - (c) its average own funds requirement for this risk does not exceed 5% of its own funds or £880,000 and, taking into account the volatility estimated in accordance with (b), the expected peak own funds requirements do not exceed 6.5% of its own funds; and
 - (d) the institution monitors on an ongoing basis whether the estimates carried out under points (a) and (b) still reflect the reality.
2. An institution shall notify to the *PRA* the use they make of the option provided in paragraph 1.

[Note: This rule corresponds to Article 356 of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 357 POSITIONS IN COMMODITIES

1. An institution shall express:
 - (a) each position in commodities or commodity derivatives in terms of the standard unit of measurement; and
 - (b) the spot price in each commodity in the reporting currency.
2. An institution shall treat positions in gold or gold derivatives as subject to foreign-exchange risk and treat these positions in accordance with Articles 351 to 354 for the purpose of calculating commodities risk.
3. For the purpose of paragraph 1 of Article 360, the institution shall calculate its net position in each commodity as the excess of an institution's long positions over its short positions, or vice versa, in the same commodity and identical commodity futures, options and warrants. It shall treat derivative instruments, as laid down in Article 358, as positions in the underlying commodity.
4. For the purposes of calculating a position in a commodity, an institution shall treat the following positions as positions in the same commodity:
 - (a) positions in different sub-categories of commodities in cases where the sub-categories are deliverable against each other; and
 - (b) positions in similar commodities if they are close substitutes and where a minimum correlation of 0.9 between price movements can be clearly established over a minimum period of one year.

[Note: This rule corresponds to Article 357 of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 358 PARTICULAR INSTRUMENTS

1. An institution shall incorporate commodity futures and forward commitments to buy or sell individual commodities in the measurement system as notional amounts in terms of the standard unit of measurement and assigned a maturity with reference to expiry date.
2. An institution shall treat commodity swaps where one side of the transaction is a fixed price and the other the current market price, as a series of positions equal to the notional amount of the contract, with, where relevant, one position corresponding with each payment on the swap and slotted into the maturity bands in paragraph 1 of Article 359. The positions shall be long positions if the institution is paying a fixed price and receiving a floating price and short

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positions if the institution is receiving a fixed price and paying a floating price. An institution shall report commodity swaps in which the sides of the transaction are in different commodities in the relevant reporting ladder for the maturity ladder approach.

3. An institution shall treat options and warrants on commodities or on commodity derivatives as if they were positions equal in value to the amount of the underlying to which the option refers, multiplied by its delta for the purposes of this Chapter. The latter positions may be netted off against any offsetting positions in the identical underlying commodity or commodity derivative. The delta used shall be that of the exchange concerned. For OTC options, or where delta is not available from the exchange concerned the institution may with the prior permission of the *PRA* calculate delta itself to the extent and subject to any modifications set out in the permission if, on applying for such permission, it is able to demonstrate to the satisfaction of the *PRA* that it is using an appropriate model which estimates the rate of change of the option's or warrant's value with respect to small changes in the market price of the underlying.

An institution that has been permitted to calculate delta itself as set out in the first sub-paragraph shall:

- (i) adequately reflect other risks associated with options, apart from the delta risk, in the own funds requirements in accordance with Article 352a; and
- (ii) comply with the requirements set out in that first sub-paragraph.

[Note: This is a permission created under sections 144G(2) and 192XC of *FSMA* to which Part 8 of the *Capital Requirements Regulations* applies]

4. [Note: Provision left blank]

5. Where an institution is either of the following, it shall include the commodities concerned in the calculation of its own funds requirement for commodities risk:

- (a) the transferor of commodities or guaranteed rights relating to title to commodities in a repurchase agreement; or
- (b) the lender of commodities in a commodities lending agreement.

[Note: Paragraphs (1), (2), (3) and (5) of this rule correspond to Article 358(1), (2), (3) and (5) of *CRR* as applied immediately before revocation by the *Treasury*]

ARTICLE 359 MATURITY LADDER APPROACH

1. An institution shall use a separate maturity ladder in line with Table 1 of this Article for each commodity. All positions in that commodity shall be assigned to the appropriate maturity bands. Physical stocks shall be assigned to the first maturity band between 0 and up to and including one month.

Table 1

Maturity band (1)	Spread rate (in %) (2)
0 ≤ 1 month	1.50
> 1 ≤ 3 months	1.50
> 3 ≤ 6 months	1.50
> 6 ≤ 12 months	1.50
> 1 ≤ 2 years	1.50

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> 2 ≤ 3 years	1.50
> 3 years	1.50

2. An institution may offset and assign positions in the same commodity to the appropriate maturity bands on a net basis for the following:
 - (a) positions in contracts maturing on the same date; and
 - (b) positions in contracts maturing within 10 days of each other if the contracts are traded on markets which have daily delivery dates.
3. The institution shall then calculate the sum of the long positions and the sum of the short positions in each maturity band. The amount of the former which are matched by the latter in a given maturity band shall be the matched positions in that band, while the residual long or short position shall be the unmatched position for the same band.
4. An institution shall treat that part of the unmatched long position for a given maturity band that is matched by the unmatched short position, or vice versa, for a maturity band further out as the matched position between two maturity bands. That part of the unmatched long or unmatched short position that cannot be thus matched shall be the unmatched position.
5. The institution shall calculate its own funds requirement for each commodity on the basis of the relevant maturity ladder as the sum of the following:
 - (a) the sum of the matched long and short positions, multiplied by the appropriate spread rate as indicated in the second column of Table 1 of this Article for each maturity band and by the spot price for the commodity;
 - (b) the matched position between two maturity bands for each maturity band into which an unmatched position is carried forward, multiplied by 0.6%, which is the carry rate and by the spot price for the commodity; and
 - (c) the residual unmatched positions, multiplied by 15% which is the outright rate and by the spot price for the commodity.
6. The institution's overall own funds requirement for commodities risk shall be calculated as the sum of the own funds requirements calculated for each commodity in accordance with paragraph 5.

[Note: This rule corresponds to Article 359 of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLE 360 SIMPLIFIED APPROACH

1. An institution's own funds requirement for each commodity shall be calculated as the sum of the following:
 - (a) 15% of the net position, long or short, multiplied by the spot price for the commodity; and
 - (b) 3% of the gross position, long plus short, multiplied by the spot price for the commodity.
2. An institution's overall own funds requirement for commodities risk shall be calculated as the sum of the own funds requirements calculated for each commodity in accordance with paragraph 1.

[Note: This rule corresponds to Article 360 of *CRR* as it applied immediately before revocation by the *Treasury*]

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ARTICLE 361 EXTENDED MATURITY LADDER APPROACH

1. An institution may use the minimum spread, carry and outright rates set out in Table 2 of this Article instead of those indicated in Article 359 provided that the institution:
 - (a) undertakes significant commodities business;
 - (b) has an appropriately diversified commodities portfolio; and
 - (c) is not yet in a position to use internal models for the purpose of calculating the own funds requirement for commodities risk.

Table 2

	Precious metals (except gold)	Base metals	Agricultural products (softs)	Other, including energy products
Spread rate (%)	1.0	1.2	1.5	1.5
Carry rate (%)	0.3	0.5	0.6	0.6
Outright rate (%)	8	10	12	15

2. An institution shall notify the use they make of this Article to the *PRA* together with evidence of their efforts to implement an internal model for the purpose of calculating the own funds requirement for commodities risk.

[Note: This rule corresponds to Article 361 of *CRR* as it applied immediately before revocation by the *Treasury*]

ARTICLES 362 to 377

[Note: Provisions left blank]

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

Annex K

Credit Valuation Adjustment Risk Part

In this Annex the text is all new and is not underlined.

Part

CREDIT VALUATION ADJUSTMENT RISK

Chapter content

- 1. APPLICATION AND DEFINITIONS**
- 2. LEVEL OF APPLICATION**
- 3. GENERAL PROVISIONS**
- 4. BASIC APPROACH**
- 5. STANDARDISED APPROACH**
- 6. ALTERNATIVE APPROACH**
- 7. TRANSITIONAL PROVISIONS**

Near-final part 1

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

1 APPLICATION AND DEFINITIONS

1.1 Unless otherwise stated, this Part applies to:

- (1) a *firm* that is a *CRR firm* but not an *ICR firm*;
- (2) a *CRR consolidation entity* that is not an *ICR consolidation entity*.

1.2 In this Part, the following definitions shall apply:

aggregate CVA

means the sum of *regulatory CVA* for all *covered transactions*.

clearing member

has the definition in Counterparty Credit Risk (CRR) Part 1.3.

client

has the definition in Counterparty Credit Risk (CRR) Part 1.3.

commodity delta risk factor

means the *risk factor* set in accordance with 5.30(3).

commodity vega risk factor

means the *risk factor* set in accordance with 5.30(4).

counterparty credit spread risk delta risk factor

means the *risk factor* set in accordance with 5.27(3).

covered transaction

means:

- (1) a derivative transaction, but excluding:
 - (a) derivatives transacted directly with a qualifying central counterparty;
 - (b) derivatives transacted with a *clearing member*, where either:
 - (i) the *clearing member* acts as financial intermediary between the *firm* and the qualifying central counterparty; or
 - (ii) the *clearing member* guarantees the performance of the *firm's* exposure to the qualifying central counterparty;
 - (c) derivatives transacted with a qualifying central counterparty where the *firm* is a *clearing member* acting as a financial intermediary between a *client* and the qualifying central counterparty;
 - (d) derivatives transacted with a *client*, where the *firm* is a *clearing member* acting as financial intermediary between the *client* and the qualifying central counterparty; and
 - (e) transactions giving rise to exposures with counterparties meeting the conditions in 3.2.
- (2) a securities financing transaction, if:
 - (a) it is fair-valued by the *firm* under the *firm's* applicable accounting framework; and
 - (b) the *firm's* CVA *risk* arising from the transaction is material.

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CVA portfolio

means a *firm's* portfolio of *covered transactions* and *eligible CVA hedges*.

eligible BA-CVA hedge

means a transaction used for the purpose of mitigating the counterparty credit spread component of *CVA risk* and managed as such, and that is either:

- (1) a single-name credit default swap or a single-name contingent credit default swap which must reference:
 - (a) the counterparty directly;
 - (b) an entity *legally related* to the counterparty; or
 - (c) an entity that belongs to the same sector and region as the counterparty; or
- (2) an index credit default swap.

eligible CVA hedge

has the same meaning as:

- (1) *eligible BA-CVA hedge* if a *firm* uses *BA-CVA*; or
- (2) *eligible SA-CVA hedge* if a *firm* uses *SA-CVA*.

eligible SA-CVA hedge

means a transaction used for the purposes of mitigating *CVA risk* that:

- (1) is not split into several effective transactions;
- (2) either:
 - (a) hedges variability of the counterparty credit spread; or
 - (b) hedges variability of the exposure component of *CVA risk*; and
- (3) is eligible for the internal models approach for *market risk* in accordance with the Market Risk: Internal Model Approach (CRR) Part.

equity delta risk factor

means the *risk factor* set in accordance with 5.29(3).

equity vega risk factor

means the *risk factor* set in accordance with 5.29(7).

external CVA hedge

means a transaction used for the purpose of mitigating *CVA risk* entered into with a third party.

foreign exchange delta risk factor

means the *risk factor* set in accordance with 5.26(3).

foreign exchange vega risk factor

means the *risk factor* set in accordance with 5.26(6).

interest rate delta risk factor

means the *risk factor* set for the following currencies: USD, EUR, GBP, AUD, CAD, SEK or JPY in accordance with 5.25(3).

interest rate vega risk factor

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means the *risk factor* set in accordance with 5.25(10).

internal CVA hedge

means a transaction used for the purpose of mitigating *CVA risk* entered into with the *firm's* own trading desk.

legally related

means cases where the reference name and the counterparty are either a parent undertaking and its subsidiary or two subsidiaries of a common parent undertaking.

loss given default

means the ratio of the loss on an exposure due to the default of a counterparty to the amount outstanding at default.

margin period of risk

has the meaning in Counterparty Credit Risk (CRR) Part 1.3.

margin threshold

has the meaning in Counterparty Credit Risk (CRR) Part 1.3.

market risk Parts

means the:

- (1) Market Risk: General Provisions (CRR) Part;
- (2) Market Risk: Simplified Standardised Approach (CRR) Part;
- (3) Market Risk: Advanced Standardised Approach (CRR) Part; and
- (4) Market Risk: Internal Model Approach (CRR) Part.

netting set

has the meaning in Article 272(4) of *CRR*.

other currencies interest rate delta risk factor

means the *risk factor* set for currencies other than USD, EUR, GBP, AUD, CAD, SEK and JPY in accordance with 5.25(3).

probability of default

means the probability of default of a counterparty.

qualified index

means:

- (1) for delta risk, a credit or equity index that satisfies liquidity and diversification conditions specified in Market Risk: Advanced Standardised Approach (CRR) Part Article 325i(3); and
- (2) for vega risk, any credit or equity index.

reference credit spread delta risk factor

means the *risk factor* set in accordance with 5.28(3).

reference credit spread vega risk factor

means the *risk factor* set in accordance with 5.28(6).

regulatory CVA

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means a CVA calculated in line with the requirements in 5.5 to 5.12.

reporting currency

means the currency in which the *firm's* annual reports are prepared.

risk class

means:

- (1) for delta risk, the categories of risk listed in 5.15; and
- (2) for vega risk, the categories of risk listed in 5.17.

risk factor

means any of the risk drivers of CVA risk, being the *commodity delta risk factor*, the *commodity vega risk factor*, the *counterparty credit spread risk delta risk factor*, the *equity delta risk factor*, the *equity vega risk factor*, the *foreign exchange delta risk factor*, the *foreign exchange vega risk factor*, the *interest rate delta risk factor*, the *interest rate vega risk factor*, the *other currencies interest rate delta risk factor*, the *reference credit spread delta risk factor*, and the *reference credit spread vega risk factor*, and risk factors relating to *qualified index* instruments in accordance with 5.21.

sensitivity

means the ratio of the change of *aggregate CVA* or the market value of all *eligible SA-CVA hedges* caused by a small change of the *risk factor's* current value to the size of the change, calculated for each *risk factor* in accordance with 5.25 to 5.30 and the prudent valuation standards set out in the Trading Book (CRR) Part Article 105.

2 LEVEL OF APPLICATION

- 2.1 A *firm* must comply with this Part on an individual basis.
- 2.2 Where a *firm* has been given permission under Article 9(1) of CRR it shall incorporate relevant subsidiaries in the calculation undertaken to comply with 2.1.
- 2.3 A *CRR consolidation entity* must comply with this Part on the basis of its consolidated situation.
- 2.4 For the purposes of 2.3, references to a *firm* in this Part (other than in 1.1 and 2.1) mean a *CRR consolidation entity*.
- 2.5 The expression 'consolidated situation' applies for the purposes of this Part as it does for the purposes of Parts Two and Three of CRR.

[Note: The term 'consolidated situation' is defined in Article 4(1)(47) of CRR]

- 2.6 A *firm* which is required to comply with Parts Two and Three of CRR on a sub-consolidated basis must comply with this Part on the same basis.

Organisational Structure and Control Mechanisms

- 2.7 A *CRR consolidation entity* and a *firm* shall set up a proper organisational structure and appropriate *internal control* mechanisms in order to ensure that the data required for consolidation for the purposes of this Part are duly processed and forwarded.
- 2.8 A *CRR consolidation entity* and a *firm* shall ensure that a subsidiary not subject to this Part implements arrangements, processes and mechanisms to ensure proper consolidation for the purposes of this Part.

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3 GENERAL PROVISIONS

- 3.1 A *firm* must calculate its own funds requirements for *CVA risk* using the following approaches:
- (1) if it has permission to use SA-CVA, in accordance with Chapter 5;
 - (2) if it does not have permission to use SA-CVA:
 - (a) if 4.1 applies, BA-CVA under Chapter 4; or
 - (b) if 6.1 applies, the alternative approach under Chapter 6.
- 3.2 A *firm* may exclude from its calculation of own funds requirements for *CVA risk* transactions that meet the following conditions:
- (1) the counterparty is:
 - (a) included in the *firm's* prudential consolidation group on a full basis; or
 - (b) an entity in the *firm's* group and the transaction between the counterparty and the *firm* is eliminated on accounting consolidation under the applicable accounting framework;
 - (2) both the counterparty and the *firm* are subject to appropriate centralised risk evaluation, measurement and control procedures; and
 - (3) there are no current or foreseen material practical or legal impediment to the prompt transfer of own funds or repayment of liabilities from the counterparty to the *firm*.
- 3.3 A *firm* must:
- (1) notify the *PRA* in writing three months prior to the date at which it starts excluding transactions with a counterparty in accordance with 3.2 and confirm the notification every three years thereafter; and
 - (2) include in each notification to the *PRA*:
 - (a) the name of the counterparty excluded in accordance with 3.2; and
 - (b) an explanation of how the conditions in 3.2 are met.
- 3.4 A *firm* must:
- (1) if it hedges *CVA risk*, use only *eligible CVA hedges*;
 - (2) not include *external CVA hedges* that are *eligible CVA hedges* in its calculation of its own funds requirements for *market risk* under the *market risk Parts*; and
 - (3) include *external CVA hedges* that are not *eligible CVA hedges* in its trading book calculation of *market risk* own funds requirements under the *market risk Parts*.
- 3.5 A *firm* may include an *internal CVA hedge* that is subject to curvature risk in accordance with Market Risk: Advanced Standardised Approach (CRR) Part Article 325e and 325g, default risk charge in accordance with Market Risk: Advanced Standardised Approach (CRR) Part Article 325v to 325ad, or residual risk add-on in accordance with Market Risk: Advanced Standardised Approach (CRR) Part Article 325u, as an *eligible CVA hedge* only if the trading desk that is the internal counterparty to the *CVA* desk enters into a transaction or a set of transactions with one or more external counterparties that exactly offsets the trading desk's position with the *CVA* desk.
- 3.6 For the purposes of 4.4, 5.27 and 5.28, where a counterparty is not externally rated, a *firm* that has been granted permission from the *PRA* under the Credit Risk: Internal Ratings Based Approach (CRR) Part Article 143 to use the internal rating based approach in accordance with the Credit Risk: Internal Rating Based Approach (CRR) Part to calculate credit risk own funds

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requirements in respect of exposures to the counterparty must map the internal rating to an external rating and assign a risk weight corresponding to either investment grade or high yield.

4 BASIC APPROACH

4.1 A *firm* that:

- (1) does not have permission from the *PRA* to use *SA-CVA*; and
- (2) if relevant to the *firm*, has not chosen to use the alternative approach in Chapter 6;

must calculate its own funds requirements for *CVA risk* for *covered transactions* in accordance with this Chapter.

Reduced version of BA-CVA

4.2 If a *firm* does not use any *eligible BA-CVA hedges* to hedge *CVA risk* it must calculate its own funds requirement for *CVA risk* in accordance with the following formula:

$$DS_{BA-CVA} \times K_{reduced}$$

where:

$DS_{BA-CVA} = 0.65$; and

$K_{reduced}$ is calculated in accordance with the following formula:

$$K_{reduced} = \sqrt{\left(\rho \cdot \sum_C SCVA_C\right)^2 + (1 - \rho^2) \cdot \sum_C SCVA_C^2}$$

where:

$SCVA_C$ = the own funds requirement for counterparty *c* on a standalone basis, in calculated in accordance with 4.3;

$\rho = 50\%$, the supervisory correlation parameter;

C = all counterparties for which the *firm* uses *BA-CVA* to calculate its own funds requirements for *CVA risk*.

4.3 For the purposes of 4.2, a *firm* must calculate $SCVA_C$ in accordance with the following formula:

$$SCVA_C = \frac{1}{\alpha} \cdot RW_C \cdot \sum_{NS} M_{NS} \cdot EAD_{NS} \cdot DF_{NS}$$

where:

RW_C is the risk weight for a counterparty that reflects the volatility of its credit spread as prescribed in the table at 4.4;

NS = *netting set*;

M_{NS} is the effective maturity for the *netting set*, calculated:

- (1) for a *firm* using the methods set out in Part Three, Title II, Chapter 6, Section 6 of *CRR*:
 - (a) in accordance with Credit Risk: Internal Ratings Based Approach (CRR) Part Article 162(2)(g) for *netting sets* with a maturity of greater than one year,

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except that M_{NS} is not capped at five years but instead at the longest contractual remaining maturity in the *netting set*; or

(b) Credit Risk: Internal Ratings Based Approach (CRR) Part Article 162(2) for *netting sets* with a maturity of less than one year;

(2) for a *firm* not using the methods set out in Part Three, Title II, Chapter 6, Section 6 of *CRR*, using the average notional weighted maturity in accordance with Credit Risk: Internal Ratings Based Approach (CRR) Part Article 162(2), except M_{NS} is not capped at five years but instead at the longest contractual remaining maturity in the *netting set*;

EAD_{NS} is the exposure at default of the *netting set*, calculated in the same manner in which the *firm* calculates exposure at default for determining own funds requirements for counterparty credit risk, in accordance with either Sections 3 to 5 of the Counterparty Credit Risk (CRR) Part or Part 3, Title II, Chapter 6, Section 6 of *CRR*;

DF_{NS} , the supervisory discount factor for the *netting set*, is:

(1) 1 if a *firm* has been granted permission from the *PRA* under Article 283 of *CRR* to use the Internal Model Method to calculate the exposure at default as part of its own funds requirements calculation for counterparty credit risk; or

(2) $\frac{1 - e^{-0.05 \cdot M_{NS}}}{0.05 \cdot M_{NS}}$ if a *firm* does not have permission to use the Internal Model Method to calculate exposure at default;

α = the value of α as specified in Counterparty Credit Risk (CRR) Part Article 274(2);

c = all counterparties for which the *firm* uses *BA-CVA* to calculate its own funds requirements for *CVA risk* and with which the *firm* has at least one *covered transaction*.

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4.4 For the purposes of 4.3, a *firm* must set the value of RW_C in accordance with the table below:

Sector of counterparty	Credit quality of counterparty	
	Investment grade	High yield and Non-rated
Sovereigns including central banks and <i>multilateral development banks</i>	0.5%	2.0%
Local government, government-backed non-financials, education and public administration	1.0%	4.0%
Financials including government-backed financials, excluding pension funds	5.0%	12.0%
Pension funds	3.5%	8.5%
Basic materials, energy, industrials, agriculture, manufacturing, mining and quarrying	3.0%	7.0%
Consumer goods and services, transportation and storage, administrative and support service activities	3.0%	8.5%
Technology, telecommunications	2.0%	5.5%
Health care, utilities, professional and technical activities	1.5%	5.0%
Other sector	5.0%	12.0%

Full version of BA-CVA

4.5 If a *firm* uses one or more *eligible BA-CVA hedges* to hedge *CVA risk* it must calculate its own funds requirement for *CVA risk* in accordance with the following formula:

$$DS_{BA-CVA} \times K_{full}$$

where:

$$DS_{BA-CVA} = 0.65;$$

$$K_{full} = \beta \cdot K_{reduced} + (1 - \beta) \cdot K_{hedged};$$

where:

$$\beta = 0.25;$$

$K_{reduced}$ is calculated in accordance with 4.2.

4.6 For the purposes of 4.5, a *firm* must calculate K_{hedged} in accordance with the following formula:

$$K_{hedged} = \sqrt{\left(\rho \cdot \sum_C (SCVA_C - SNH_C) - IH \right)^2 + (1 - \rho^2) \cdot \sum_C (SCVA_C - SNH_C)^2 + \sum_C HMA_C}$$

where:

$SCVA_C$ is calculated in accordance with 4.3;

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$\rho = 50\%$;

SNH_C is calculated in accordance with 4.7;

IH is calculated in accordance with 4.8;

HMA_C is calculated in accordance with 4.9;

$c =$ all counterparties for which the *firm* uses *BA-CVA* to calculate its own funds requirements for *CVA risk* and with which the *firm* has at least one *covered transaction*.

4.7 For the purposes of 4.6, a *firm* must calculate SNH_C in accordance with the following formula:

$$SNH_C = \sum_{h \in C} r_{hc} \cdot RW_h \cdot M_h^{SN} \cdot B_h^{SN} \cdot DF_h^{SN}$$

where:

$r_{hc} =$ the supervisory correlation between the credit spread of counterparty c and the credit spread of a single-name hedge h of counterparty (c) determined in accordance with the table at 4.10;

$M_h^{SN} =$ the remaining maturity of a single-name *eligible BA-CVA hedge*;

$B_h^{SN} =$ the notional of single-name *eligible BA-CVA hedge* (h) (for single-name contingent credit default swaps, the notional must be determined by the current market value of the reference portfolio or instrument);

$DF_h^{SN} =$ the supervisory discount factor for a single-name hedge, calculated as:

$$\frac{1 - e^{-0.05 \cdot M_h^{SN}}}{0.05 \cdot M_h^{SN}}$$

$RW_h =$ the supervisory risk weight of single-name hedge h that reflects the volatility of the credit spread of the reference name of the hedging instrument set in accordance with the table at 4.4;

$h =$ the index that denotes all single name *eligible BA-CVA hedges* that the *firm* has taken out to hedge the *CVA risk* of a counterparty.

4.8 For the purposes of 4.6, a *firm* must calculate IH in accordance with the following formula:

$$IH = \sum_i RW_i^{ind} \cdot M_i^{ind} \cdot B_i^{ind} \cdot DF_i^{ind}$$

where:

$M_i^{ind} =$ the remaining maturity of index *eligible BA-CVA hedge*;

$B_i^{ind} =$ the notional of the index *eligible BA-CVA hedge*;

$DF_i^{ind} =$ the supervisory discount factor calculated in accordance with the following formula:

$$\frac{1 - e^{-0.05 \cdot M_i^{ind}}}{0.05 \cdot M_i^{ind}}$$

RW_i^{ind} is the supervisory risk weight of the index *eligible BA-CVA hedge*, as specified in the table at 4.4 but adjusted as follows:

(1) for an index where all index constituents belong to the same sector and are of the same credit quality, the *firm* must multiply the relevant value in Table 1 by 0.7;

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(2) for an index spanning multiple sectors or with a mixture of investment grade constituents and other grade constituents, the *firm* must calculate the name-weighted average of the risk weights from Table 1 and then multiply by 0.7;

i = the index that denotes all index hedges that the *firm* has taken out to hedge *CVA risk*.

4.9 For the purposes of 4.6, a *firm* must calculate HMA_C in accordance with the following formula:

$$HMA_C = \sum_{h \in C} (1 - r_{hc}^2) \cdot (RW_h \cdot M_h^{SN} \cdot B_h^{SN} \cdot DF_h^{SN})^2$$

where r_{hc} , M_h^{SN} , B_h^{SN} , DF_h^{SN} , and RW_h are as set out in 4.7.

4.10 For the purposes of 4.7, a *firm* must set the value of r_{hc} in accordance with the table below:

Single name hedge of counterparty c	Value of r_{hc}
references counterparty c directly	100%
is <i>legally related</i> to counterparty c	80%
shares sector and region with counterparty c	50%

5 STANDARDISED APPROACH

PRA permission

5.1 This Chapter applies to a *firm* which has permission from the *PRA* to use *SA-CVA* to calculate its own funds requirement for *CVA risk*, applying the requirements of this Chapter to the extent and subject to any modifications set out in the permission.

[Note: This is a permission under section 144G and 192XC of *FSMA* to which Part 8 of the *Capital Requirements Regulations* applies]

5.2 A *firm* may with the prior permission of the *PRA* use *SA-CVA* to calculate its own funds requirement for *CVA risk* if, on applying for such permission, the *firm* can demonstrate to the satisfaction of the *PRA* that:

- (1) it is able to calculate, and report to the *PRA*, its own funds requirement for *CVA risk* in accordance with this Chapter;
- (2) it complies with the qualitative requirements in 5.13; and
- (3) it has a *CVA desk* or similar dedicated function responsible for risk management and hedging of *CVA risk*.

5.3 A *firm* that has permission from the *PRA* to use *SA-CVA*:

- (1) must use *SA-CVA* to calculate its own funds requirement for *CVA risk* in accordance with this Chapter to the extent and subject to any modifications set out in the permission;
- (2) may choose to use *BA-CVA* to calculate its own funds requirement for *CVA risk* for one or more *netting sets* in respect of which it has permission from the *PRA* to use *SA-CVA*; and
- (3) may split a *netting set* into two *netting sets*, one containing transactions in respect of which the *firm* uses *BA-CVA* in accordance with 5.3(2) and the other containing transactions in respect of which the *firm* uses *SA-CVA* if:
 - (a) the split is consistent with the treatment of the *netting set* used by the *firm* for calculating *CVA* under the *firm's* applicable accounting framework; or
 - (b) the *firm's* permission from the *PRA* to use *SA-CVA* does not cover all the transactions within a *netting set*.

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(4) shall comply with the requirements of 5.2(1) to (3).

5.4 A *firm's* application for permission under 5.2 must contain:

- (1) an explanation that the *firm* meets the conditions in 5.2;
- (2) the *firm's* policies for ensuring compliance with Chapters 2, 3, 5 and 7; and
- (3) an explanation of the *firm's* intended split of *covered transactions* between SA-CVA and BA-CVA, including *netting sets*, in accordance with 5.3(2).

Regulatory CVA calculation requirements

5.5 A *firm* must:

- (1) calculate its own funds requirement for *CVA risk* on a *monthly* basis;
- (2) have the ability to calculate its own funds requirement for *CVA risk* on a daily basis;
- (3) calculate *regulatory CVA* for each counterparty with which it has at least one *covered transaction*; and
- (4) express the *regulatory CVA* by specifying that non-zero losses must have a positive value.

5.6 A *firm* must calculate *regulatory CVA*:

- (1) as the expectation of future losses resulting from default of the counterparty under the assumption that the *firm* is free from the default risk;
- (2) based on at least the following three sets of inputs:
 - (a) term structure of market-implied *probability of default*;
 - (b) market-consensus expected *loss given default*; and
 - (c) simulated paths of discounted future exposure; and
- (3) by ensuring that for transactions with a significant level of dependence between the exposure and the counterparty's credit quality, the dependence is taken into account across at least one of the inputs in (2).

5.7 For the purposes of 5.6(2)(a):

- (1) a *firm* must estimate the term structure of market-implied *probability of default* using credit spreads of the counterparty where these are observable in the market;
- (2) where credit spreads of the counterparty are not observable in the market, a *firm* must estimate ~~market-implied~~ *probability of default* from proxy spreads:
 - (a) by estimating the credit spread curve of the counterparty from observable credit spreads using a methodology that discriminates on at least the following three variables:
 - (i) a measure of credit quality;
 - (ii) industry; and
 - (iii) region;
 - (b) by estimating the credit spread curve of the counterparty from the credit spread observed in the market of a single reference name, and must be able to justify the appropriateness of each use of a single reference name to the *PRA*; or
 - (c) using its own assessment of credit risk where no appropriate credit spreads are observable. Where historical probabilities of default are used as part of this assessment, the *firm* must not base the resulting spread on historical *probability of default* only.

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5.8 For the purposes of 5.6(2)(b):

- (1) unless 5.8(3) applies, the market-consensus expected *loss given default* value used by the *firm* must be the same as the one used to calculate the risk-neutral *probability of default* from credit spreads;
- (2) the *firm* must ensure that collateral provided by the counterparty does not change the seniority of the derivative exposure;
- (3) by way of derogation from (1), if the seniority of the transactions with the counterparty differs from the seniority of senior unsecured bonds that is implied by the value of expected *loss given default*, the *firm* must reflect this difference in seniority by adjusting the value of expected *loss given default*.

5.9 For the purposes of 5.6(2)(c):

- (1) a *firm* must:
 - (a) produce the simulated paths of discounted future exposure by pricing all derivative transactions with the counterparty along simulated paths of relevant market *risk factors* and discounting the prices to the date of calculation using risk-free interest rates along the path; and
 - (b) simulate all market *risk factors* material for the transactions with a counterparty as stochastic processes for an appropriate number of paths defined on an appropriate set of future time points extending to the maturity of the longest transaction.
 - (2) a *firm* may recognise collateral as risk mitigation if:
 - (a) the collateral management requirements specified in Article 287 of *CRR* are satisfied;
 - (b) all documentation used in collateralised transactions is binding on all parties and legally enforceable in all relevant jurisdictions; and
 - (c) the *firm* has conducted sufficient legal review to verify the condition in 5.9(2)(b) and undertakes such further review as necessary to ensure continuing enforceability.
 - (3) a *firm* must, for exposures to counterparties subject to a margin agreement, ensure that:
 - (a) the simulated paths of discounted future exposure capture the effects of margining collateral that is recognised as risk mitigation along each exposure path;
 - (b) its exposure model appropriately captures all the relevant contractual features including whether unilateral or bilateral, the frequency of margin calls, the type of collateral, *margin thresholds*, independent amounts, initial margins and minimum transfer amounts; and
 - (c) its exposure model assumes a *margin period of risk* which cannot be less than:
 - (i) 4+N *business days* for securities financing transactions unless the margin agreement has daily or intra-daily exchange of margin, where the *margin period of risk* is 5 *business days*; or
 - (ii) 9+N *business days* for all other transactions;
- where:
- N= the re-margining period specified in the margin agreement.

5.10 A *firm* must:

- (1) obtain the simulated paths of discounted future exposure from the exposure models used by the *firm* for calculating CVA under the *firm's* applicable accounting framework, adjusted as necessary to meet the requirements of this Chapter; and

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- (2) use the same model calibration process (with the exception of the *margin period of risk*), market and transaction data as it uses for calculating CVA under the *firm's* applicable accounting framework.

5.11 A *firm* must ensure the generation of market *risk factor* paths underlying its exposure models comply with the following requirements:

- (1) drifts of *risk factors* are consistent with a risk-neutral probability measure and not historical calibration of drifts;
- (2) the volatilities and correlations of *risk factors* are calibrated to:
 - (a) market data, if sufficient data exist in a given market; or
 - (b) historical market data, if sufficient data is not available; and
- (3) the distribution of modelled *risk factors* account for the possible non-normality of the distribution of exposures.

5.12 A *firm* must ensure that its calculation of *regulatory CVA* recognises *netting sets* in the same manner in which the *firm* calculates CVA under the *firm's* applicable accounting framework.

Qualitative requirements

5.13 A *firm* must ensure that:

- (1) its exposure models used for calculating *regulatory CVA* are part of a *CVA risk* management framework that includes the identification, measurement, management, approval and internal reporting of *CVA risk*;
- (2) its *senior management* is actively involved in the risk control process and must regard *CVA risk* control as an essential aspect of the business to which sufficient resources are devoted;
- (3) it has a process for ensuring compliance with a documented set of internal policies, controls and procedures concerning the operation of the exposure system it uses for calculating CVA under the *firm's* applicable accounting framework;
- (4) it maintains an independent control unit that is responsible for the effective initial and ongoing validation of its exposure models, which is:
 - (a) independent from the business credit and trading units, including the CVA desk;
 - (b) adequately staffed; and
 - (c) reports directly to *senior management* of the *firm*;
- (5) its documentation of the process for initial and ongoing validation of its exposure models:
 - (a) is detailed enough to enable a third party to understand how the models operate, their limitations, and their key assumptions, and to recreate the analysis;
 - (b) sets out the minimum frequency with which ongoing validation will be conducted as well as other circumstances under which additional validation will be conducted; and
 - (c) describes how the validation is conducted with respect to data flows and portfolios, what analyses are used and how representative counterparty portfolios are constructed;
- (6) the pricing models used to calculate exposure for a given path of *risk factors* must:
 - (a) be tested against appropriate independent benchmarks for a wide range of market states as part of the initial and ongoing model validation process; and
 - (b) for options, account for the non-linearity of option value with respect to *risk factors*;

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- (7) its internal audit function carries out an independent review of the overall *CVA risk* management process on a regular basis, covering both the activities of the *CVA desk* and the independent risk control unit;
- (8) it defines criteria against which to assess the exposure models and their inputs, and has a written policy describing the process to assess performance of the exposure models and remedy unacceptable performance;
- (9) its exposure models capture transaction-specific information in order to aggregate exposures at the level of the *netting set*;
- (10) it assigns transactions to the appropriate *netting set* within the model;
- (11) it reflects transaction terms and specifications in its exposure models in a timely, complete and conservative fashion;
- (12) it stores transaction terms and specifications in a secure database that is subject to formal and periodic internal audit;
- (13) it subjects the transmission of transaction terms and specifications data to the exposure model to internal audit and formal reconciliation processes are in place between the exposure model and source data systems to verify on an ongoing basis that transaction terms and specifications are reflected in the exposure model appropriately;
- (14) it uses in its exposure models current and historical market data that is:
 - (a) acquired independently of the lines of business and is compliant with the *firm's* applicable accounting framework;
 - (b) fed into the exposure models in a timely and complete fashion;
 - (c) maintained in a secure database subject to periodic internal audit; and
 - (d) subject to a well-developed data integrity process to handle erroneous or anomalous data observations; and
- (15) it sets internal policies to identify suitable proxies where its exposure models rely on proxy market data and it can demonstrate empirically on an ongoing basis that the proxy provides a conservative representation of the underlying risk under adverse market conditions.

Delta and vega risks

5.14 A *firm* must calculate its own funds requirement for *CVA risk* as the sum of the own funds requirements for:

- (1) delta risk calculated in accordance with 5.15; and
- (2) vega risk calculated in accordance with 5.17;

for the *firm's* entire *CVA portfolio*.

5.15 A *firm* must calculate the own funds requirement for delta risk as the sum of the delta risk own funds requirement calculated separately for each of the following *risk classes* using the formula in 5.24:

- (1) interest rate risk;
- (2) foreign exchange risk;
- (3) counterparty credit spread risk;
- (4) reference credit spread risk;
- (5) equity risk;

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- (6) commodity risk.
- 5.16 A firm must assign an *eligible SA-CVA hedge* for credit spread delta risk in its entirety either to the counterparty credit spread or to the reference credit spread *risk class*.
- 5.17 A firm must calculate the own funds requirement for vega risk as the sum of the vega risk own funds requirement calculated for each of the following *risk classes* using the formula in rule 5.24:
- (1) interest rate risk;
 - (2) foreign exchange risk;
 - (3) reference credit spread risk;
 - (4) equity risk;
 - (5) commodity risk.
- 5.18 A firm may use smaller values of *risk factor* shifts than the shifts specified in 5.25 to 5.30 for each *risk class* if doing so is consistent with its internal risk management calculations.
- 5.19 A firm must calculate *sensitivities* for vega risk:
- (1) whether or not the *CVA portfolio* includes options; and
 - (2) by applying the relevant volatility shift to the *risk class* as required by 5.25 to 5.30 to the volatilities used for generating *risk factor* paths and pricing options.
- 5.20 If an *eligible SA-CVA hedge* is an index instrument, a firm must:
- (1) calculate its *sensitivities* to all *risk factors* upon which the value of the index depends; and
 - (2) calculate the index *sensitivity* to the *risk factor* by applying the shift of the *risk factor* to all index constituents that depend on the *risk factor* and recalculating the changed value of the index.
- 5.21 For the purpose of calculating the delta and vega *sensitivities* for counterparty credit spread risk, reference credit spread risk and equity risk in accordance with 5.25 to 5.30, a firm may use additional *risk factors* that correspond to *qualified index* instruments, provided that the firm:
- (1) calculates delta and vega *sensitivities* to a *risk factor* that corresponds to a *qualified index* as a single *sensitivity* to the underlying *qualified index*;
 - (2) where 75% or more of the constituents of a *qualified index* are mapped to the same sector, maps the *qualified index* to that same sector; and
 - (3) where less than 75% of the constituents of a *qualified index* are mapped to the same sector, maps the *sensitivity* to the applicable *qualified index* bucket.
- 5.22 A firm must calculate the weighted *sensitivities* of the *aggregate CVA* and of the market value of all *eligible SA-CVA hedges* to each *risk factor* applicable to each *risk class* in accordance with the following formulae:

$$WS_k^{CVA} = RW_k S_k^{CVA}$$

$$WS_k^{Hdg} = RW_k S_k^{Hdg}$$

where:

WS_k^{CVA} = the weighted *sensitivity* of *aggregate CVA* to *risk factor* (k);

RW_k = the risk weight applicable to the *risk factor* (k) as specified in 5.25 to 5.30;

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s_k^{CVA} = the net *sensitivity* of the *aggregate CVA* to *risk factor* (k)

WS_k^{Hdg} = the weighted *sensitivity* of the market value of all the *eligible SA-CVA hedges* in the *CVA portfolio* to *risk factor* (k); and

s_k^{Hdg} = the net *sensitivity* of the market value of all the *eligible CVA hedges* in the *CVA portfolio* to *risk factor* (k).

5.23 A firm must calculate the net weighted *sensitivity* of the *CVA portfolio* to each *risk factor* in accordance with the following formula:

$$WS_k = WS_k^{CVA} - WS_k^{Hdg}$$

where:

WS_k = net weighted *sensitivity* of the *CVA portfolio* to *risk factor* (k);

WS_k^{CVA} is calculated in accordance with 5.22; and

WS_k^{Hdg} is calculated in accordance with 5.22.

5.24 For each *risk class*, a firm must:

(1) for each bucket (b), aggregate the weighted *sensitivities* into an own funds requirement (K_b) in accordance with the following formula:

$$K_b = \sqrt{\left(\sum_{k \in b} WS_k^2 + \sum_{k \in b} \sum_{l \in b, l \neq k} \rho_{kl} WS_k WS_l \right) + R \cdot \sum_{k \in b} ((WS_k^{Hdg})^2)}$$

where:

R = the hedging disallowance parameter set at 0.01;

ρ_{kl} = the intra-bucket correlation parameter between *risk factors*, determined within each *risk class*;

WS_k and WS_l = calculated in accordance with 5.23 for *risk factors* k and l;

WS_k^{Hdg} = calculated in accordance with 5.22.

(2) aggregate the own funds requirement calculated for each bucket in accordance with (1) across buckets within each *risk class* to calculate the own funds requirement for each *risk class* (K), in accordance with the following formula:

$$K = m_{CVA} \sqrt{\sum_b K_b^2 + \sum_b \sum_{b \neq c} \gamma_{bc} S_b S_c}$$

where:

m_{CVA} = multiplier factor equal to 1;

γ_{bc} = the cross-bucket correlation parameter determined within each *risk class*;

S_b = the sum of the weighted *sensitivities* for all *risk factors* (k) within each bucket (b), floored by $-K_b$ and capped by K_b in accordance with the following formula:

$$S_b = \max \left\{ -K_b; \min \left(\sum_{k \in b} WS_k; K_b \right) \right\}$$

where:

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WS_k = calculated in accordance with 5.23;

K_b = calculated in accordance with 5.24(1);

S_c = the sum of the weighted *sensitivities* for all *risk factors* (k) within each bucket (c), floored by $-K_c$ and capped by K_c in accordance with the following formula:

$$S_c = \max \left\{ -K_c; \min \left(\sum_{k \in c} WS_k; K_c \right) \right\}$$

where:

WS_k is calculated in accordance with 5.23;

K_c is calculated in accordance with 5.24(1) where K_c is a different bucket from K_b .

Interest rate risk

5.25 For the purposes of calculating the own funds requirement for interest rate risk in accordance with 5.14 to 5.24, a *firm* must:

- (1) set buckets for individual currencies;
- (2) set cross-bucket correlation (γ_{bc}) at 0.5 for all currency pairs (b, c);
- (3) set the delta *risk factor* for interest rate risk to either:
 - (a) for the following currencies: USD, EUR, GBP, AUD, CAD, SEK or JPY, the absolute change of the inflation rate and of the risk-free yields for the following five tenors: one year, two years, five years, 10 years and 30 years; or
 - (b) for all other currencies, the absolute change of the inflation rate and the parallel shift of the entire risk-free yield curve for a given currency;
- (4) for each *interest rate delta risk factor* measure the *sensitivities* to:
 - (a) the risk-free yields by changing the risk-free yield for the relevant tenor for all curves in the relevant currency associated with the bucket by 0.0001 and dividing the resulting change in the *aggregate CVA*, and the value of *eligible CVA hedges*, by 0.0001; and
 - (b) the inflation rate by changing the inflation rate by 0.0001 and dividing the resulting change in the *aggregate CVA*, and the value of *eligible CVA hedges*, by 0.0001;
- (5) set the risk weight (RW_k) for each *interest rate delta risk factor* (k) as follows:

Risk factor	1 year	2 years	5 years	10 years	30 years	Inflation
Risk weight	1.11%	0.93%	0.74%	0.74%	0.74%	1.11%

- (6) set the correlations (ρ_{kl}) between pairs of each *interest rate delta risk factor* (k, l) as follows:

	1 year	2 years	5 years	10 years	30 years	Inflation
1 year	100%	91%	72%	55%	31%	40%
2 years		100%	87%	72%	45%	40%
5 years			100%	91%	68%	40%

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10 years				100%	83%	40%
30 years					100%	40%
Inflation						100%

- (7) for each *other currency interest rate delta risk factor* measure the *sensitivity* to:
- the yield curve by applying a parallel shift to all risk-free yield curves in a given currency by 0.0001 and dividing the resulting change in the *aggregate CVA*, and the value of *eligible SA-CVA hedges*, by 0.0001; and
 - the inflation rate by changing the inflation rate by 0.0001 and dividing the resulting change in the *aggregate CVA*, and the value of *eligible SA-CVA hedges*, by 0.0001;
- (8) set the *other currencies interest rate delta risk factor risk weights* (RW_k) for both the risk-free yield curve and the inflation rate at 1.58%;
- (9) set the *other currencies interest rate delta risk factor correlations* (ρ_{kl}) between the risk-free yield curve and the inflation rate at 40%;
- (10) set the *interest rate vega risk factors* for all currencies to the simultaneous relative change of all volatilities for the inflation rate and a simultaneous relative change of all interest rate volatilities for a given currency;
- (11) for the *interest rate vega risk factor* measure the *sensitivity*:
- to the interest rate volatilities by applying a simultaneous shift to all interest rate volatilities by 1% relative to their current values and dividing the resulting change in the *aggregate CVA*, and the value of *eligible CVA hedges*, by 0.01;
 - to the inflation rate volatilities by applying a simultaneous shift to inflation rate volatilities for a given currency by 1% relative to their current values and dividing the resulting change in the *aggregate CVA*, and the value of *eligible CVA hedges*, by 0.01;
- (12) for both the interest rate volatilities and the inflation rate volatilities for the *interest rate vega risk factor* set the *risk weights* (RW_k) at 100% for all currencies; and
- (13) for the *interest rate vega risk factor* set the *correlations* (ρ_{kl}) between the interest rate volatilities and the inflation rate volatilities at 40%.

Foreign exchange risk

5.26 For the purposes of calculating the own funds requirement for foreign exchange risk in accordance with 5.14 to 5.24, a *firm* must:

- set buckets per individual currencies except for the *firm's reporting currency*;
- set the cross-bucket correlation (γ_{bc}) at 0.6 for all currency pairs;
- set the *foreign exchange delta risk factor* to the relative change of the FX spot rate between a given currency and the *firm's reporting currency*, where the FX spot rate is the current market price of one unit of another currency expressed in the units of the *firm's reporting currency*;
- for the *foreign exchange delta risk factor* for all currencies measure the *sensitivities* to:
 - foreign exchange spot rates by shifting the exchange rate between the *firm's reporting currency* and another currency by 1% relative to its current value and dividing the

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resulting change in the *aggregate CVA*, and the value of *eligible SA-CVA hedges*, by 0.01; and

- (b) for transactions that reference an exchange rate between a pair of currencies where neither currency is the *firm's reporting currency*, the foreign exchange spot rates between the *firm's reporting currency* and each of the referenced currencies that are not the *firm's reporting currency*;
- (5) for all exchange rates between the *firm's reporting currency* and another currency set the *foreign exchange delta risk factor* risk weights (RW_k) at 11%;
- (6) set the *foreign exchange vega risk factor* to a simultaneous relative change of all volatilities for an exchange rate between the *firm's reporting currency* and another given currency;
- (7) for the *foreign exchange vega risk factor* for all currencies measure:
 - (a) the *sensitivities* to the foreign exchange volatilities by simultaneously shifting all volatilities for a given exchange rate between the *firm's reporting currency* and another currency by 1% relative to their current values and dividing the resulting change in the *aggregate CVA*, and the value of *eligible SA-CVA hedges*, by 0.01;
 - (b) for transactions that reference an exchange rate between a pair of currencies where neither is the *firm's reporting currency*, the volatilities of the foreign exchange spot rates between the *firm's reporting currency* and each of the referenced currencies that are not the *firm's reporting currency*; and
- (8) for the *foreign exchange vega risk factor* set the risk weights (RW_k) at 100%.

Counterparty credit spread risk

5.27 For the purposes of calculating the own funds requirement for counterparty credit spread risk in accordance with 5.14 to 5.24, a *firm* must:

- (1) assign exposures to buckets in accordance with the following table:

Bucket number	Sector
1	a) Sovereigns including central banks, <i>multilateral development banks</i> b) Local government, government-backed non-financials, education and public administration
2	a) Financials including government-backed financials, excluding pension funds b) Pension funds
3	Basic materials, energy, industrials agriculture, manufacturing, mining and quarrying
4	Consumer goods and services, transportation and storage, administrative and support services activities
5	Technology, telecommunications
6	Health care, utilities, professional and technical activities
7	Other sector
8	<i>Qualified Indices</i>

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where:

(a) a firm must:

- (i) only assign instruments that reference a *qualified index* to bucket 8, while all single-name and all non-*qualified index* hedges must be assigned to buckets 1 to 7; and
- (ii) for any instrument referencing an index assigned to buckets 1 to 7, calculate the *sensitivity* of the hedge to each index constituent.

(2) set cross-bucket correlations (γ_{bc}) as follows:

Bucket	1	2	3	4	5	6	7	8
1	100%	10%	20%	25%	20%	15%	0%	45%
2		100%	5%	15%	20%	5%	0%	45%
3			100%	20%	25%	5%	0%	45%
4				100%	25%	5%	0%	45%
5					100%	5%	0%	45%
6						100%	0%	45%
7							100%	0%
8								100%

- (3) set the *counterparty credit spread risk delta risk factors* for a given bucket to absolute shifts of credit spreads of each counterparty, reference name (for counterparty credit spread hedges if any) or *qualified index* for the following tenors: 0.5 years, one year, three years, five years and 10 years;
- (4) for each bucket, measure the *sensitivity* to the *counterparty credit spread risk delta risk factors* by, for each counterparty, reference name or *qualified index*, and each tenor point, shifting the relevant credit spread by 0.0001 and dividing the resulting change in the *aggregate CVA*, and the value of *eligible SA-CVA hedges*, by 0.0001;
- (5) set the risk weights (RW_k) for each *risk factor* (k) according to the following table depending on the counterparty's bucket:

Bucket	1 a)	1 b)	2 a)	2 b)	3	4	5	6	7	8
Investment grade names	0.5%	1.0%	5.0%	3.5%	3.0%	3.0%	2.0%	1.5%	5.0%	1.5%
High yield and not rated names	2.0%	4.0%	12.0%	8.5%	7.0%	8.5%	5.5%	5.0%	12.0%	5.0%

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- (6) for buckets 1 to 7, calculate the correlation parameter (ρ_{kl}) between two weighted sensitivities (WS_k) and (WS_l) according to the following formula:

$$\rho_{kl} = \rho_{tenor} \cdot \rho_{name} \cdot \rho_{quality}$$

where:

ρ_{tenor} = 100% if the two tenors are the same and 90% otherwise;

ρ_{name} = 100% if the two counterparty or reference names are the same, 90% if the two counterparty or reference names are distinct, but *legally related* and 50% otherwise;

$\rho_{quality}$ = 100% if the credit quality of the two counterparty or reference names is the same and 80% otherwise.

- (7) for bucket 8, calculate the correlation parameter (ρ_{kl}) between two weighted sensitivities (WS_k) and (WS_l) in accordance with the following formula:

$$\rho_{kl} = \rho_{tenor} \cdot \rho_{name} \cdot \rho_{quality}$$

where:

ρ_{tenor} = 100% if the two tenors are the same and 90% otherwise;

ρ_{name} = 100% if the two indices are the same and of the same series, 90% if the two indices are the same, but of distinct series, and 80% otherwise;

$\rho_{quality}$ = 100% if the credit quality of the two indices is the same and 80% otherwise.

Reference credit spread risk

5.28 For the purposes of calculating the own funds requirement for reference credit spread risk in accordance with 5.14 to 5.24, a *firm* must:

- (1) assign exposures to buckets in accordance with the following table:

Bucket number	Credit quality	Sector of reference name
1	Investment grade	Sovereigns including central banks, <i>multilateral development banks</i>
2		Local government, government-backed non-financials, education and public administration
3		Financials including government-backed financials
4		Basic materials, energy, industrials, agriculture, manufacturing, mining and quarrying
5		Consumer goods and services, transportation and storage, administrative and support service activities
6		Technology, telecommunications
7		Health care, utilities, professional and technical activities

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8	High yield and not rated	Sovereigns including central banks, <i>multilateral development banks</i>
9		Local government, government-backed non-financials, education and public administration
10		Financials including government-backed financials
11		Basic materials, energy, industrials, agriculture, manufacturing, mining and quarrying
12		Consumer goods and services, transportation and storage, administrative and support service activities
13		Technology, telecommunications
14		Health care, utilities, professional and technical activities
15	(Not applicable)	Other sector
16	Investment grade	<i>Qualified index</i>
17	High yield	<i>Qualified index</i>

(2) for reference credit spread delta risk and vega risk set the cross-bucket correlations (γ_{bc}) for buckets (b, c):

(a) between buckets of the same credit quality, by applying the cross-bucket correlations in the following table:

Bucket	1/8	2/9	3/10	4/11	5/12	6/13	7/14	15	16	17
1/8	100%	75%	10%	20%	25%	20%	15%	0%	45%	45%
2/9		100%	5%	15%	20%	15%	10%	0%	45%	45%
3/10			100%	5%	15%	20%	5%	0%	45%	45%
4/11				100%	20%	25%	5%	0%	45%	45%
5/12					100%	25%	5%	0%	45%	45%
6/13						100%	5%	0%	45%	45%
7/14							100%	0%	45%	45%
15								100%	0%	0%
16									100%	75%
17										100%

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- (b) between buckets 1 to 14 of different credit quality, by dividing the correlations in the table at 5.28(2)(a) by 2;
- (3) set the *reference credit spread delta risk factor* for a given bucket to the simultaneous absolute shift of the credit spreads of all tenors for all reference names in the bucket;
- (4) for each bucket measure the *sensitivity* to the *reference credit spread delta risk factors* by simultaneously shifting the credit spreads of all tenors for all reference names in the bucket by 0.0001 and dividing the resulting change in the *aggregate CVA*, and the market value of *eligible SA-CVA hedges*, by 0.0001;
- (5) for the *reference credit spread delta risk factors* set the risk weights (RW_k) in accordance with the following tables depending on the reference name's bucket:

Investment grade bucket	1	2	3	4	5	6	7	8	9
Risk Weight	0.5%	1.0%	5.0%	3.0%	3.0%	2.0%	1.5%	2.0%	4.0%

High yield/Not rated bucket	10	11	12	13	14	15	16	17
Risk weight	12.0%	7.0%	8.5%	5.5%	5.0%	12.0%	1.5%	5.0%

- (6) set the *reference credit spread vega risk factor* for a given bucket is the simultaneous relative shift of the volatilities of credit spreads of all tenors for all reference names in the bucket;
- (7) for each bucket measure the *sensitivity* to the *reference credit spread vega risk factor* by simultaneously shifting the volatilities of credit spreads of all tenors for all reference names in the bucket by 1% relative to their current values and dividing the resulting change in the *aggregate CVA*, and the value of *eligible SA-CVA hedges*, by 0.01;
- (8) set the risk weights (RW_k) for the credit spread volatilities for the *reference credit spread vega risk factor*, at 100%.

Equity risk

5.29 For the purposes of calculating the own funds requirement for equity risk in accordance with 5.14 to 5.24, a *firm* must:

- (1) assign exposures to buckets as follows:

Bucket number	Size	Region	Sector of issuer
1		Emerging market economies	Consumer goods and services, transportation and storage, administrative and support service activities, healthcare, utilities
2			Telecommunications, industrials

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3	Large market capitalisation		Basic materials, energy, agriculture, manufacturing, mining and quarrying	
4			Financials including government-backed financials, real estate activities, technology	
5		Advanced economies	Consumer goods and services, transportation and storage, administrative and support service activities, healthcare, utilities	
6			Telecommunications, industrials	
7			Basic materials, energy, agriculture, manufacturing, mining and quarrying	
8			Financials including government-backed financials, real estate activities, technology	
9		Small market capitalisation	Emerging market economies	All sectors described under bucket numbers 1, 2, 3, and 4
10			Advanced economies	All sectors described under bucket numbers 5, 6, 7, and 8
11	(Not applicable)		Other sector	
12	Large capitalisation, advanced economies		<i>Qualified index</i>	
13	Other		<i>Qualified index</i>	

where:

market capitalisation= the sum of the market capitalisation across all stock markets globally of the same legal entity, unless its parent undertaking has *listed* securities, in which case the market capitalisation of the parent undertaking;

large market capitalisation= a market capitalisation equal to or greater than GBP 1.6 billion;

small market capitalisation= a market capitalisation of less than GBP 1.6 billion;

advanced economies= the UK, Canada, the United States, Mexico, the euro area, Norway, Sweden, Denmark, Switzerland, Japan, Australia, New Zealand, Singapore and Hong Kong SAR;

emerging market economies= all economies that are not advanced economies.

(2) for the purposes of (1):

- (a) when assigning a risk exposure to a sector bucket, rely on a classification that is commonly used in the market for grouping issuers by industry sector;
- (b) assign each issuer to one of the sector buckets in the table above and assign all issuers from the same industry to the same sector;
- (c) assign to bucket 11 any risk positions from any issuer that the *firm* cannot assign to a sector in a manner that complies with 5.29(2)(a) and (b);

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- (d) assign multinational multi-sector equity issuers to a bucket according to the most material region and sector in which the issuer operates;
- (3) set the *equity delta risk factor* to the simultaneous relative shift of equity spot prices for all reference names in the bucket;
- (4) set cross-bucket correlation (γ_{bc}) at:
 - (a) 15% for cross-bucket pairs within buckets 1 to 10;
 - (b) 75% for cross-bucket pairs within buckets 12 and 13;
 - (c) 45% for cross-bucket pairs between buckets 12 or 13 and any of buckets 1 to 10; and
 - (d) 0% for all cross-bucket pairs that include bucket 11.
- (5) for each bucket measure the *sensitivity* to the *equity delta risk factor* by simultaneously shifting the equity spot prices for all reference names in the bucket by 1% relative to their current values and dividing the resulting change in the *aggregate CVA*, and the value of *eligible SA-CVA hedges*, by 0.01;
- (6) for the *equity delta risk factor*, set risk weights (RW_k) depending on the reference name's bucket in accordance with the following table:

Bucket number	Risk weight
1	55%
2	60%
3	45%
4	55%
5	30%
6	35%
7	40%
8	50%
9	70%
10	50%
11	70%
12	15%
13	25%

- (7) set the *equity vega risk factor* to the simultaneous relative shift of the volatilities for all reference names in the bucket;
- (8) for each bucket measure the *sensitivity* to the *equity vega risk factor* by simultaneously shifting the volatilities for all reference names in the bucket by 1% relative to their current

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values and dividing the resulting change in the *aggregate CVA* and the value of *eligible SA-CVA hedges* by 0.01;

- (9) for the *equity vega risk factor*, set the risk weights (RW_k) at 78% for large market capitalisation buckets and at 100% for the other buckets.

Commodity risk

5.30 For the purposes of calculating the own funds requirement for commodity risk in accordance with 5.14 to 5.24, a *firm* must:

- (1) assign exposures to buckets as follows:

Bucket number	Commodity group	Examples
1	Energy – Solid combustibles	coal, charcoal, wood pellets, nuclear fuel (including uranium)
2	Energy – Liquid combustibles	crude oil (including Light-sweet, heavy, West Texas Intermediate and Brent); biofuels (including bioethanol and biodiesel); petrochemicals (including propane, ethane, gasoline, methanol and butane); refined fuels (including jet fuel, kerosene, gasoil, fuel oil, naphtha, heating oil and diesel)
3	Energy – Electricity and carbon trading	electricity (including spot, day-ahead, peak and off-peak); carbon emissions trading (including certified emissions reductions, in-delivery <i>month EU</i> allowance, Regional Greenhouse Gas Initiative CO2 allowance and renewable energy certificates)
4	Freight	dry-bulk route (including Capesize, Panamax, Handysize and Supramax); liquid-bulk/gas shipping route (such as Suezmax, Aframax and very large crude carriers)
5	Metals – non-precious	base metal (including aluminium, copper, lead, nickel, tin and zinc); steel raw materials (including steel billet, steel wire, steel coil, steel scrap and steel rebar, iron ore, tungsten, vanadium, titanium and tantalum); minor metals (including cobalt, manganese, molybdenum)
6	Gaseous combustibles	natural gas; liquefied natural gas
7	Precious metals (including gold)	gold; silver; platinum; palladium
8	Grains & oilseed	corn; wheat; soybean (including soybean seed, soybean oil and soybean meal); oats; palm oil; canola; barley; rapeseed (including rapeseed seed, rapeseed oil, and rapeseed meal); red bean, sorghum; coconut oil; olive oil; peanut oil; sunflower oil; rice
9	Livestock & dairy	cattle (including live and feeder); hog; poultry; lamb; fish; shrimp; dairy (including milk, whey,

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		eggs, butter and cheese)
10	Softs and other agriculturals	cocoa; coffee (including arabica and robusta); tea; citrus and orange juice; potatoes; sugar; cotton; wool; lumber and pulp; rubber
11	Other commodity	industrial minerals (including potash, fertiliser and phosphate rocks), rare earths; terephthalic acid; flat glass

- (2) set the cross-bucket correlation (γ_{bc}) at:
 - (a) 20% for all cross-bucket pairs that fall within bucket numbers 1 to 10; and
 - (b) 0% for all cross-bucket pairs that include bucket 11;
- (3) set the *commodity delta risk factor* to simultaneous relative shift of the commodity spot prices for all commodities in the bucket;
- (4) set the *commodity vega risk factor* to simultaneous relative shift of the volatilities for all commodities in the bucket;
- (5) for each bucket measure the *sensitivity* to the *commodity delta risk factor* by simultaneously shifting the spot prices of all commodities in the bucket by 1% relative to their current values and dividing the resulting change in the *aggregate CVA*, and the value of *eligible SA-CVA hedges*, by 0.01;
- (6) for the *commodity delta risk factor*, set the risk weights (RW_k) corresponding to the reference commodity's bucket in accordance with the following table:

Bucket number	1	2	3	4	5	6	7	8	9	10	11
RW	30%	35%	60%	80%	40%	45%	20%	35%	25%	35%	50%

- (7) for each bucket measure the *sensitivity* to the *commodity vega risk factor* by simultaneously shifting the volatilities for all commodities in the bucket by 1% relative to their current values and dividing the resulting change in the *aggregate CVA*, and the value of *eligible SA-CVA hedges*, by 0.01; and
- (8) for the *commodity vega risk factor* set the risk weights (RW_k) at 100%.

6 ALTERNATIVE APPROACH

6.1 A firm that:

- (1) has non-centrally cleared derivatives of a notional aggregate amount less than GBP 88 billion; and
- (2) does not have permission from the PRA to use SA-CVA;

may choose to calculate its own funds requirement for *CVA risk* using the alternative approach in 6.2, instead of using *BA-CVA*.

6.2 A firm using the alternative approach must hold an own funds requirement for *CVA risk* equal to 100% of the firm's own funds requirement for counterparty credit risk calculated in accordance with either:

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- (1) the Counterparty Credit Risk (CRR) Part and, if the *firm* has chosen to calculate its own funds requirement in respect of securities financing transactions in accordance with the Credit Risk Mitigation (CRR) Part, the Credit Risk Mitigation (CRR) Part; or
- (2) if the *firm* has been granted permission by the *PRA* to do so, the Internal Model Method set out in Part Three, Title II, Chapter 6, Section 6 of *CRR*, and, if the *firm* has chosen to calculate its own funds requirement in respect of securities financing transactions in accordance with the Credit Risk Mitigation (CRR) Part, the Credit Risk Mitigation (CRR) Part.

6.3 For the purposes of 6.2, a *firm* must:

- (1) not recognise the effect of *CVA* hedges; and
- (2) apply the alternative approach to the *firm's* entire portfolio of *covered transactions*.

6.4 A *firm* that chooses to use the alternative approach in 6.2 must notify the *PRA* in writing that it meets the condition in 6.1(1) prior to using the alternative approach.

7 TRANSITIONAL PROVISIONS

7.1 A *firm* may, until 1 January 2030:

- (1) exclude from its calculation of own funds requirements for *CVA risk* transactions entered into prior to 1 July 2025 with the following counterparties:
 - (a) non-financial counterparties as defined in point (9) of Article 2 of Regulation (EU) No 648/2012 and non-financial counterparties established in a *third country* where those transactions do not exceed the clearing threshold as specified in Article 10(3) and (4) of Regulation (EU) No 648/2012;
 - (b) counterparties referred to in point (10) of Article 2 of Regulation (EU) No 648/2012 and point (1) of Article 89 of Regulation (EU) No 648/2012; and
 - (c) counterparties referred to in Article 1(4) and (5) of Regulation (EU) No 648/2012 and counterparties for which the *firm* had been assigning a risk weight of 0% for exposures to those counterparties in accordance with Articles 114(4) and 115(2) of *CRR* as those Articles applied immediately before revocation by the *Treasury*; or
- (2) apply a final discount scalar ($\hat{\omega}_T$) to its own funds requirement for *CVA risk* in accordance with the following formula:

$$\hat{\omega}_T = \max\left(\bar{\omega}_t, \frac{K_0^{b3.1 \text{ scope}}}{K_T^{b3.1 \text{ scope}}} \cdot \bar{\omega}_t + \frac{K_T^{b3.1 \text{ scope}} - K_0^{b3.1 \text{ scope}}}{K_T^{b3.1 \text{ scope}}} \cdot 100\%\right)$$

where:

T = the date of calculation of own funds requirements for *CVA risk*;

$\bar{\omega}_t$ = the intermediate discount scalar, calculated in accordance with 7.2;

$K_0^{b3.1 \text{ scope}}$ = calculated in accordance with 7.2;

$K_T^{b3.1 \text{ scope}}$ = the amount of own funds requirements for *CVA risk* on all *covered transactions* at T , calculated using the reduced version of *BA-CVA* at 4.2 and the exposure value calculated in accordance with Counterparty Credit Risk (CRR) Part Article 274.

7.2 For the purposes of 7.1(2), the intermediate discount scalar ($\bar{\omega}_t$) must be calculated in accordance with the following formula:

$$\bar{\omega}_t = \max\left(\omega_t, 100\% - \frac{K_0^{b3.1 \text{ scope}} - K_0^{CRR \text{ scope}}}{K_0^{b3.1 \text{ scope}}} \cdot \frac{(5-t)}{5} \cdot \frac{1-\omega_t}{1-\omega_0}\right)$$

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where:

t = elapsed time of the transitional period, where t=0 on 1 July 2025, t=1 on 1 January 2026, t=2 on 1 January 2027, t=3 on 1 January 2028 and t=4 on 1 January 2029;

ω_t = the transitional weighting cap which must be applied as prescribed in the table below:

Date	Transitional weighting cap ω_t
From and including 1 July 2025 to and including 31 December 2025	50%
From and including 1 January 2026 to and including 31 December 2026	60%
From and including 1 January 2027 to and including 31 December 2027	70%
From and including 1 January 2028 to and including 31 December 2028	80%
From and including 1 January 2029 to and including 31 December 2029	90%

$K_0^{b3.1 \text{ scope}}$ = the own funds requirements for *CVA risk* on all *covered transactions* at t=0, calculated using the reduced version of *BA-CVA* at 4.2 and the exposure value calculated in accordance with Counterparty Credit Risk (CRR) Part Article 274;

$K_0^{CRR \text{ scope}}$ = the amount of own funds requirements for *CVA risk* on all *covered transactions* at t=0, excluding transactions with counterparties referred to in 7.1(1), calculated using the reduced version of *BA-CVA* at 4.2 and the exposure value calculated in accordance with Counterparty Credit Risk (CRR) Part Article 274;

$\frac{K_0^{b3.1 \text{ scope}} - K_0^{CRR \text{ scope}}}{K_0^{b3.1 \text{ scope}}}$ = the proportion of transactions with counterparties referred to in 7.1(1) that were excluded from *CVA risk* capital requirements prior to 1 July 2025, relative to total own funds requirements for *CVA risk* calculated at t=0 using the reduced version of *BA-CVA* at 4.2 and the exposure value calculated in accordance with Counterparty Credit Risk (CRR) Part Article 274 (the 'legacy exempt ratio');

$\frac{(5-t)}{5}$ = time discount factor, that linearly reduces the proportion of legacy exempt trades to reflect the assumed maturing and liquidation of previously exempted trades over the transitional period;

$\frac{1-\omega_t}{1-\omega_0}$ = the transitional weighting, where ω_t is calculated in accordance with the table above, and $\omega_0 = 0.5$.

7.3 For the purposes of 7.1(2), a *firm* must calculate:

- the final discount scalar ($\hat{\omega}_T$) at the same frequency as it calculates its own funds requirement for *CVA risk*;
- the transitional weighting cap (ω_t) and legacy exempt ratio as set out in 7.1(2) annually; and

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- (c) the legacy exempt ratio on 1 July 2025, and recalculate the legacy exempt ratio at any point there is a material change in quantum or risk of the *firm's* transactions with counterparties referred to in 7.1(1).
- 7.4 If, as of 1 July 2025, a *firm* has not chosen to exclude a transaction in accordance with 7.1(1), the *firm* must include the transaction in its calculation of its own funds requirements for *CVA risk* until the maturity date of the transaction.
- 7.5 A *firm* that applies the treatment in 7.1(1) or (2) may apply either but not both during the period from and including 1 July 2025 to and including 31 December 2029.

Near-final part 1

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Annex L

Operational Risk Part

In this Annex, the text is all new and is not underlined.

Part

OPERATIONAL RISK

Chapter content

- 1. APPLICATION AND DEFINITIONS**
- 2. LEVEL OF APPLICATION**
- 3. ORGANISATIONAL STRUCTURE AND CONTROL MECHANISMS**
- 4. OWN FUNDS REQUIREMENTS**
- 5. THE STANDARDISED APPROACH**
- 6. POLICIES AND PROCESSES**
- 7. IDENTIFICATION, COLLECTION AND TREATMENT OF LOSS DATA**

Annex 1

Annex 2

Near-final part 1

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

1 APPLICATION AND DEFINITIONS

1.1 This Part applies to:

- (1) a *firm* that is a *CRR firm* but not an *ICR firm*; and
- (2) a *CRR consolidation entity* that is not an *ICR consolidation entity*.

1.2 In this Part, the following definitions shall apply:

Business Indicator

has the meaning given in 5.2.

Business Indicator Component

has the meaning given in 5.7.

financial component

means the items specified in the table C in Annex 1 of this Part, excluding any items specified in table D in Annex 1 of this Part.

gross loss

means loss before *recoveries* of any type.

interest, leases and dividend component

means the items specified in table A in Annex 1 of this Part, excluding any items specified in table D in Annex 1 of this Part.

Internal Loss Multiplier

has the meaning given in 5.9.

Level 1 supervisory categories

means the event types specified in the first column of the table in Annex 2 of this Part.

net loss

means loss after taking into account the impact of *recoveries*.

recoveries

means an independent occurrence which is related to the original loss event and separate in time in which funds or inflows of economic benefits are received from a third party (excluding receivables).

services component

means the items specified in the table B in Annex 1 of this Part, excluding any items specified in table D in Annex 1 of this Part.

standardised approach

means the approach to calculating operational risk which is set out in Chapter 5.

2 LEVEL OF APPLICATION

2.1 A *firm* must comply with this Part on an individual basis.

2.2 Where a *firm* has been given permission under Article 9(1) of *CRR* it shall incorporate relevant subsidiaries in the calculation undertaken to comply with 2.1.

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- 2.3 A *CRR consolidation entity* must comply with this Part on the basis of its consolidated situation.
- 2.4 For the purposes of 2.3, references to a *firm* in this Part (other than in 1.1 and 2.1) mean a *CRR consolidation entity*.
- 2.5 The expression 'consolidated situation' applies for the purposes of this Part as it does for the purposes of Parts Two and Three of *CRR*.

[Note: the term 'consolidated situation' is defined in Article 4(1)(47) of *CRR*]

- 2.6 A *firm* which is required to comply with Parts Two and Three of *CRR* on a sub-consolidated basis must comply with this Part on the same basis.

3 ORGANISATIONAL STRUCTURE AND CONTROL MECHANISMS

- 3.1 A *CRR consolidation entity* and a *firm* shall set up a proper organisational structure and appropriate *internal control* mechanisms in order to ensure that the data required for consolidation for the purposes of this Part are duly processed and forwarded.
- 3.2 A *CRR consolidation entity* and a *firm* shall ensure that a subsidiary not subject to this Part implements arrangements, processes and mechanisms to ensure proper consolidation for the purposes of this Part.

4 OWN FUNDS REQUIREMENTS

- 4.1 A *firm* must calculate its own funds requirement for operational risk in accordance with the *standardised approach* by multiplying the *Business Indicator Component* and the *Internal Loss Multiplier*.

5 THE STANDARDISED APPROACH

General

- 5.1 The *standardised approach* comprises:
- (1) the *Business Indicator*,
 - (2) the *Business Indicator Component*, and
 - (3) the *Internal Loss Multiplier*.

Business Indicator

- 5.2 The *Business Indicator* is the sum of the following three components:
- (1) the *interest, leases and dividend component*,
 - (2) the *services component*, and
 - (3) the *financial component*,
- which are to be calculated in accordance with the table at 5.3.

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5.3 Table: calculation of the *Business Indicator*

Component	Formula
<i>interest, leases and dividend component</i>	$\text{Min}\left[\frac{\overline{\text{Abs}(\text{Interest Income} - \text{Interest Expense})}}{\times \overline{\text{Interest Earning Assets}}}\right] + \overline{\text{Dividend Income}}$
<i>services component</i>	$\text{Max}[\overline{\text{Other Operating Income}}; \overline{\text{Other Operating Expense}}] + \text{Max}[\overline{\text{Fee Income}}; \overline{\text{Fee Expense}}]$
<i>financial component</i>	$\frac{\overline{\text{Abs}(\text{Net Profit and Loss Trading Book})}}{+ \overline{\text{Abs}(\text{Net Profit and Loss Banking Book})}}$

5.4 In the table at 5.3:

- (1) a bar above a term indicates that the value must be calculated as an average over the last three years, except that a *firm* may use forward looking estimates where it has been in operation for less than three years;
- (2) the absolute value of net items must firstly be calculated year by year and after that calculation the average over the last three years must be calculated, except that a *firm* may use forward looking estimates where it has been in operation for less than three years; and
- (3) a *firm* must use audited figures where they are available but may use business estimates where audited figures are not available.

5.5 In calculating the *Business Indicator*:

- (1) subject to (2), a *firm* must include any business acquisitions, mergers or disposals of entities or activities which occurred during the three year period referred to in 5.4;
- (2) a *firm* may apply to the *PRA* for permission to exclude business acquisitions, mergers or disposals of entities or activities which occurred during the three year period referred to in 5.4 where it can demonstrate that, due to an acquisition or merger, disposals of entities or activities, using the three year period referred to in 5.4 would lead to a biased estimation for the own funds requirement for operational risk.

[Note: This is a permission under section 144G and 192XC of *FSMA* to which Part 8 of the *Capital Requirements Regulations* applies]

5.6 In applying the *standardised approach* within a *consolidation group*, the applicable *Business Indicator* figures are as follows:

- (1) at the consolidated level, the fully consolidated *Business Indicator* figures which net all intragroup income and expenses;
- (2) at a sub-consolidated level, the *Business Indicator* figures for the *firms* consolidated at the particular sub-consolidation level which net all income and expenses at this level; and
- (3) at the subsidiary level, the *Business Indicator* figures for the subsidiary.

Business Indicator Component

5.7 A *firm* must calculate the *Business Indicator Component* by multiplying the *Business Indicator* by the applicable marginal coefficients set out in the table at 5.8.

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5.8 Table: *Business Indicator* range and marginal coefficients

Bucket	<i>Business Indicator</i> range (£bn)	<i>Business Indicator</i> marginal coefficients
1	≤ 0.88	12%
2	$0.88 < \textit{Business Indicator} \leq 26$	15%
3	> 26	18%

Internal Loss Multiplier

5.9 The *Internal Loss Multiplier* is equal to one.

6 POLICIES AND PROCESSES

6.1 A *firm* must establish, implement and maintain policies and processes to evaluate and manage its exposure to operational risk.

6.2 In establishing, implementing and maintaining policies and processes to evaluate and manage its exposure to operational risk a *firm* must:

- (1) have an independent risk management function for operational risk;
- (2) ensure that its internal measurement system for operational risk is closely integrated into its day-to-day risk management processes and that the output is an integral part of the process of monitoring and controlling the *firm's* operational risk profile;
- (3) implement a system of reporting to *senior management* that provides operational risk reports to relevant functions within the *firm* and procedures for taking appropriate action according to that information;
- (4) implement an assessment and management system for operational risk which is well documented with clear responsibilities assigned for this system and practices for ensuring compliance and addressing non-compliance;
- (5) conduct regular reviews of its operational risk management processes and measurement systems which are performed by internal or external auditors;
- (6) ensure that internal validation processes for operational risk management operate in a sound and effective manner; and
- (7) ensure that data flows and processes associated with its risk measurement system for operational risk are transparent and accessible.

7 IDENTIFICATION, COLLECTION AND TREATMENT OF LOSS DATA

7.1 A *firm* must identify, collect and treat internal loss data in accordance with the following general requirements:

- (1) it must have documented procedures and processes for the identification and collection of internal loss data which must be subject to regular independent reviews by internal and/or external audit functions;

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- (2) it must base its internal loss data on an observation period of ten years: in the event that reliable data is not available over a period of ten years it may, exceptionally, be based on a shorter period of no less than five years;
- (3) it must map its historical internal loss data into the relevant *Level 1 supervisory categories* and document criteria for allocating losses to the specified event types consistently with the descriptions, categories and examples set out in the second, third and fourth columns of the table in Annex 2 of this Part;
- (4) its internal loss data must be comprehensive and capture all material activities and exposures from all appropriate subsystems and geographic locations: the minimum threshold for including a loss event in the data collection is £20,000;
- (5) in addition to information on *gross loss* amounts, it must collect information about the reference dates of operational risk events including:
 - (a) the date when the event happened or first began, where available;
 - (b) the date on which the *firm* became aware of the event; and
 - (c) the date (or dates) when a loss event results in a loss, reserve or provision against a loss being recognised in the *firm's* profit and loss accounts;
- (6) in addition to (5), it must collect information on recoveries of *gross loss* amounts as well as descriptive information about the drivers or causes of the loss event: the level of detail of any descriptive information should be commensurate with the size of the *gross loss* amount;
- (7) operational loss events that relate to credit risk:
 - (a) must not be included in the loss data set where the event is accounted for in the risk-weighted exposure amount for credit risk; and
 - (b) must be included in the loss data set where the event is not accounted for in the risk-weighted exposure amount for credit risk;
- (8) operational risk losses related to market risk must be treated as operational risk losses; and
- (9) it must implement processes to independently review the comprehensiveness, accuracy and quality of loss data.

7.2 A *firm* must identify, collect and treat internal loss data in accordance with the following specific requirements:

- (1) it must be able to identify the *gross loss* amounts, non-insurance *recoveries*, and insurance *recoveries* for all operational loss events;
- (2) it must use losses net of *recoveries* (including insurance *recoveries*) in the loss dataset and may only use *recoveries* to reduce losses after the *firm* receives payment;
- (3) it must provide the *PRA* with information which verifies the receipt of payments used to reduce losses if requested by the *PRA*;
- (4) it must include the following items in the *gross loss* computation of the loss data set:
 - (a) direct charges (including impairments and settlements) to the *firm's* profit and loss accounts and write-downs due to the operational risk event;
 - (b) costs incurred as a consequence of the operational risk event including external expenses with a direct link to the event (such as legal expenses directly related to the event and fees paid to advisors or suppliers) and costs of repair or replacement incurred to restore the position that was prevailing before the operational risk event;

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- (c) provisions or reserves accounted for in the profit and loss account against the potential operational loss impact;
 - (d) losses stemming from operational risk events with a definitive financial impact which are temporarily booked in transitory and/or suspense accounts and are not yet reflected in the profit and loss account: material losses in this category must be included in the loss data set within a time period commensurate with the size and age of the pending item; and
 - (e) negative economic impacts booked in a financial accounting period due to operational risk events impacting the cash flows or financial statements of previous financial accounting periods: material losses in this category must be included in the loss data set when they are due to operational risk events that span more than one financial accounting period and give rise to legal risk;
- (5) it must exclude the following items from the *gross loss* computation of the loss data set:
- (a) costs of general maintenance contracts on property, plant or equipment;
 - (b) internal or external expenditures to enhance the business after the operational risk losses (including upgrades, improvements, risk assessment initiatives and enhancements); and
 - (c) insurance premiums;
- (6) in relation to accounting dates:
- (a) it must use the date of accounting for building the loss data set;
 - (b) it must use a date no later than the date of accounting for including losses related to legal events in the loss data set and for such events the date of accounting is the date when a legal reserve is established for the probable estimated loss in the profit and loss account; and
 - (c) it must allocate losses caused by a common operational risk event, or by related operational risk events over time but posted to the accounts over several years, to the corresponding years of the loss database in line with their accounting treatment.

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Annex 1 – Business Indicator components

Table A: items to be included in the *interest, leases and dividend component*

Items	Description	Sub items
Interest income	Interest income from all financial assets and other interest income	Interest income
	Profits from leased assets	Operating leases other than investment property
Interest expense	Interest expenses from all financial liabilities and other interest expenses	Interest expense
	Losses from leased assets and depreciation and impairment of operating leased assets	Operating leases other than investment property
Interest earning assets	Total gross outstanding loans, advances, interest-bearing securities (including government bonds) and lease assets measured at the end of the financial year	Cash, cash balances at central banks and other demand deposits
		Financial assets held for trading
		Non-trading financial assets mandatorily at fair value through profit or loss
		Financial assets designated at fair value through profit or loss
		Financial assets at fair value through other comprehensive income
		Financial assets at amortised cost
		Derivatives – hedge accounting
		Tangible and intangible assets: assets subject to operating lease
Dividend income	Dividend income from investments in stocks and funds not consolidated in the <i>firm's</i> financial statements, including dividend income from non-consolidated subsidiaries, associates and joint ventures	Dividend incomes

Table B: items to be included in the *services component*

Items	Description	Sub items
Fee and commission income	Income received from providing advice and services. Includes income received by the <i>firm</i> as an outsourcer of financial services	Fee and commission income

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Fee and commission expense	Expense paid for receiving advice and services. Includes outsourcing fees paid by the <i>firm</i> for the supply of financial services but not outsourcing fees paid for the supply of non-financial services	Fee and commission expense
Other operating income	Income from ordinary banking operations not included in other <i>Business Indicator</i> items but of a similar nature (income from operating leases should be excluded)	Other operating income
		MINUS Operating leases other than investment property
		Profit from non-current assets and disposal groups classified as held for sale not qualifying as discontinued operations
Other operating expense	Expenses and losses from ordinary banking operations not included in other <i>Business Indicator</i> items but of a similar nature and from operational loss events (expenses from operating leases should be excluded)	Other operating expense
		MINUS Operating leases other than investment property
		Expenses related to establishing provisions/reserves for operational loss events: new additions including increases in existing provisions
		MINUS Expenses related to establishing provisions/reserves for operational loss events: unused amounts reversed during the period
		Losses from non-current assets and disposal groups classified as held for sale not qualifying as discontinued operations

Table C: items to be included in the *financial component*

Items	Description	Sub items
Net trading (loss) on trading book	Net profit (loss) on trading book	Gains or (-) losses on financial assets and liabilities held for trading, net
Net profit (loss) on banking book	Realised gains/losses on financial assets and liabilities not measured at fair value through profit and loss	Gains or (-) losses on de-recognition of financial assets and liabilities not measured at fair value through profit or loss, net
		Gains or (-) losses on non-trading financial assets mandatorily at fair value through profit or loss, net
	Net profit/loss on financial assets and liabilities measured at fair value through profit and loss	Gains or (-) losses on financial assets and liabilities designated at

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		fair value through profit or loss, net
	Net profit/loss from hedge accounting	Gains or (-) losses from hedge accounting, net
	Net profit/loss from exchange differences	Exchange differences (gain or (-) loss), net

Table D: items which do not contribute to any components of the *Business Indicator*

Income and expenses from insurance or reinsurance businesses
Premiums paid and reimbursements/payments received from insurance or reinsurance policies purchased
Administrative expenses including staff expenses, outsourcing fees paid for the supply of non-financial services (for example logistical, IT, human resources), and other administrative expenses (for example IT, utilities, telephone, travel, office supplies, postage)
Recovery of administrative expenses including recovery of payments on behalf of customers (for example taxes debited to customers)
Expenses of premises and fixed assets (except when these expenses result from operational loss events)
Depreciation/amortisation of tangible and intangible assets (except depreciation related to operating lease assets, which should be included in financial and operating lease expenses)
Provisions/reversal of provisions (for example on pensions, commitments and guarantees given) except for provisions related to operational loss events
Expenses due to share capital repayable on demand
Impairment/reversal of impairment (for example on financial assets, non-financial assets, investments in subsidiaries, joint ventures and associates)
Changes in goodwill recognised in profit or loss
Corporate income tax (tax based on profits including current tax and deferred)

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

Annex 2 – Detailed loss event type classification

Event-type category (Level 1)	Description	Categories (Level 2)	Activity examples (Level 3)
Internal fraud	Losses due to acts of a type intended to defraud, misappropriate property or circumvent regulations, the law or company policy, excluding diversity/discrimination events, which involves at least one internal party	Unauthorised activity	Transactions not reported (intentional) Transaction type unauthorised (with monetary loss) Mismarking of position (intentional)
		Theft and fraud	Fraud/credit fraud/worthless deposits Theft/extortion/embezzlement/robbery Misappropriation of assets Malicious destruction of assets Forgery Check kiting Smuggling Account takeover/impersonation etc. Tax non-compliance/evasion(wilful) Bribes/kickbacks Insider trading (not on <i>firm's</i> account)
External fraud	Losses due to acts of a type intended to defraud, misappropriate property or circumvent the law, by a third party	Theft and fraud	Theft/robbery Forgery Check kiting
		Systems security	Hacking damage Theft of information (with monetary loss)
Employment practices and workplace safety	Losses arising from acts inconsistent with employment, health or safety laws or agreements, from payment of personal injury claims, or from diversity/discrimination events	Employee relations	Compensation, benefit, termination issues Organised labour activity
		Safe environment	General liability (slip and fall etc.) Employee health and safety rules events Workers compensation
		Diversity and discrimination	All discrimination types

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

Clients, products and business practices	Losses arising from an unintentional or negligent failure to meet a professional obligation to specific clients (including fiduciary and suitability requirements), or from the nature or design of a product	Suitability, disclosure and fiduciary	Fiduciary breaches/guideline violations Suitability/disclosure issues (know-your-customer etc.) Retail customer disclosure violations Breach of privacy Aggressive sales Account churning Misuse of confidential information Lender liability
		Improper business or market practices	Antitrust Improper trade/market practices Market manipulation Insider trading (on <i>firm's</i> account) Unlicensed activity Money laundering
		Product flaws	Product defects (unauthorised etc.) Model errors
		Selection, sponsorship and exposure	Failure to investigate client per guidelines Exceeding client exposure limits
		Advisory activities	Disputes over performance of advisory activities
Damage to physical assets	Losses arising from loss or damage to physical assets from natural disaster or other events	Disasters and other events	Natural disaster losses Human losses from external sources (terrorism, vandalism)
Business disruption and system failures	Losses arising from disruption of business or system failures	Systems	Hardware Software Telecommunications Utility outage/disruptions
Execution, delivery and process management	Losses from failed transaction processing or process management, from relations with trade counterparties and	Transaction capture, execution and maintenance	Miscommunication Data entry, maintenance or loading error Missed deadline or responsibility

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	vendors		<p>Model/system mis-operation</p> <p>Accounting error/entity attribution error</p> <p>Other task mis-performance</p> <p>Delivery failure</p> <p>Collateral management failure</p> <p>Reference data maintenance</p>
		Monitoring and reporting	<p>Failed mandatory reporting obligation</p> <p>Inaccurate external report (loss incurred)</p>
		Customer intake and documentation	<p>Client permissions/disclaimers missing</p> <p>Legal documents missing/incomplete</p>
		Customer/client account management	<p>Unapproved access given to accounts</p> <p>Incorrect client records (loss incurred)</p> <p>Negligent loss or damage of client assets</p>
		Trade counterparties	<p>Non-client counterparty mis-performance</p> <p>Miscellaneous non-client counterparty disputes</p>
		Vendors and suppliers	<p>Outsourcing</p> <p>Vendor disputes</p>

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

Annex M

Amendments to the Credit Risk Part

This Annex is left intentionally blank.

Near-final part 1

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

Annex N

Amendments to the Standardised Approach and Internal Ratings Based Approach to Credit Risk (CRR) Part

This Annex is left intentionally blank.

Near-final part 1

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

Annex O

Amendments to the Trading Book (CRR) Part

In this Annex, new text is underlined and deleted text is struck through.

Part

TRADING BOOK (CRR)

Chapter content

1. APPLICATION AND DEFINITIONS
2. LEVEL OF APPLICATION
- 2A. ORGANISATIONAL STRUCTURE AND CONTROL MECHANISMS
3. TRADING BOOK (PART THREE TITLE I CHAPTER 1, AND ARTICLE 94, CRR)
4. RULES SUPPLEMENTING ARTICLE 105 ON STANDARDS FOR PRUDENTIAL VALUATION (PREVIOUSLY REGULATION (EU) NO 2016/101)

Near-final part

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

1 APPLICATION AND DEFINITIONS

...

1.2 In this Part, the following definition shall apply:

eligible third party protection provider

means a third party protection provider that meets the criteria in Article 201 of the Credit Risk Mitigation (CRR) Part.

2 LEVEL OF APPLICATION

Application of requirements on an individual basis

2.1 Title II of Part One (Level of application) of the CRR applies to Chapters 3 and 4 of this Part as that Title applies to Part Three (Capital Requirements) of the CRR.~~[Deleted]~~

2.1A An institution shall comply with this Part on an individual basis.

[Note: Rule 2.1A sets out an equivalent provision to Article 6(1) of CRR that applies to this Part]

2.2 Where an institution has been given permission under Article 9(1) of CRR it shall incorporate relevant subsidiaries in the calculation undertaken to comply with rule 2.1A.

[Note: Rule 2.2 applies Article 9(1) of CRR to this Part where a permission under that Article has been given]

Application of requirements on a consolidated basis

2.3 A CRR consolidation entity shall comply with this Part on the basis of its consolidated situation.

[Note: Rule 2.3 sets out an equivalent provision to the first sentence of Article 11(1) of CRR that applies to this Part]

2.4 For the purposes of applying this Part on a consolidated basis, the terms 'institution' and 'UK parent institution' shall include a CRR consolidation entity (if it would not otherwise have been included).

[Note: Rule 2.4 sets out an equivalent provision to the first sub-paragraph of Article 11(2) of CRR that applies to this Part]

2.5 The expression 'consolidated situation' applies for the purposes of this Part as it does for the purposes of Parts Two and Three of CRR.

[Note: The term 'consolidated situation' is defined in Article 4(1)(47) of CRR]

Application of requirements on a sub-consolidated basis

2.6 An institution that is required to comply with Parts Two and Three of CRR on a sub-consolidated basis, shall comply with this Part on the same basis.

[Note: This rule sets out Article 11(6) of CRR that applies to this Part]

2A ORGANISATIONAL STRUCTURE AND CONTROL MECHANISMS

2A.1 A CRR consolidation entity and an institution shall set up a proper organisational structure and appropriate internal control mechanisms in order to ensure that the data required for consolidation for the purposes of this Part are duly processed and forwarded.

[Note: Rule 2A.1 sets out an equivalent provision to the second sentence of Article 11(1) of CRR that applies to this Part]

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2A.2 A CRR consolidation entity and an institution shall ensure that a subsidiary not subject to this Part implements arrangements, processes and mechanisms to ensure proper consolidation for the purposes of this Part.

[Note: Rule 2A.2 sets out an equivalent provision to the third sentence of Article 11(1) of CRR that applies to this Part]

3 TRADING BOOK (PART THREE TITLE I CHAPTER 1, AND ARTICLE 94, CRR)

...

ARTICLE 103 MANAGEMENT OF THE TRADING BOOK

1. ~~An i~~stitutions shall have in place clearly defined policies and procedures for the overall management of the trading book. Those policies and procedures shall at least address:

...

(f) the extent to which the institution can, and is required to, actively manage the risks of positions within its trading operation; and

(g) ~~[Note: Provision left blank]~~the extent to which the institution may reclassify risk or positions between the non-trading and trading books and the requirements for such reclassifications as referred to in Article 104a.

...

[Note: Paragraph 1(a) to (g) of this rule corresponds to Article 104(2)(a) to (f) of CRR as it applied immediately before revocation by the Treasury. Paragraph 2 of ~~t~~This rule corresponds to Article 103 of ~~the~~CRR as it applied immediately before revocation by the Treasury.]

ARTICLE 104 INCLUSION IN THE TRADING BOOK OR NON-TRADING BOOK

1. ~~An i~~stitutions shall have in place clearly defined policies and procedures for determining which position to include in the trading book for the purposes of calculating their capital requirements, in accordance with the requirements set out in Article 102 and the definition of trading book in accordance with point (86) of Article 4(1) of CRR, taking into account the institution's risk management capabilities and practices. The institution shall fully document its compliance with these policies and procedures and shall subject them to ~~periodic~~annual internal audit.

2. ~~[Note: Provision left blank]~~An institution must assign to the non-trading book instruments that are:

(a) unlisted equities;

(b) instruments designated for securitisation warehousing;

(c) direct holdings of real estate, provided that holdings in a real estate investment trust or real estate fund are not considered direct holdings in real estate for these purposes;

(d) derivatives on direct holdings of real estate;

(e) retail credit exposures (including credit exposures to small or medium-sized enterprise (SME));

(f) shares or units in a CIU, except where either:

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- (i) the institution has the ability to look through the CIU to its individual components and there is sufficient and frequent information, verified by an independent third party, provided to the institution regarding the individual components of the CIU; or
 - (ii) the institution obtains daily price quotes for the CIU and it has access to the information contained in the mandate of the CIU or in the national regulations governing the CIU;
 - (g) shares or units in a CIU that is an unlisted hedge fund;
 - (h) derivative instruments and shares or units in a CIU that have the instruments in any of points (a) to (g) as underlying instruments;
 - (i) instruments held for the purpose of hedging risks arising from instruments in points (a) to (h); and
 - (j) own liabilities of the institution, unless such instruments result from market-making activities.
3. An institution must assign to the trading book an instrument that:
- (a) is not listed in paragraph 2;
 - (b) meets the requirement in paragraph 1 of Article 102; and
 - (c) meets any of the requirements in paragraph 4, 5 or 6.
4. An institution must assign to the trading book an instrument that meets the requirements of points (a) and (b) of paragraph 3 and is held by the institution for one or more of the following reasons:
- (a) short-term resale;
 - (b) profiting from short-term price movements;
 - (c) locking in arbitrage profits; or
 - (d) hedging risks that arise from instruments held for one or more of the reasons in points (a) to (c).
5. An institution must assign to the trading book an instrument that meets the requirements of points (a) and (b) of paragraph 3 and is any of the following:
- (a) an instrument in a correlation trading portfolio;
 - (b) an instrument that would give rise to a non-negligible net short credit or equity position in the non-trading book; or
 - (c) an instrument that results from securities underwriting commitments, which relates only to securities that the institution is expected to purchase on the settlement date other than such securities which the institution has subscribed to purchase before the settlement date with the intention to be assigned to the non-trading book.

For the purposes of point (b) of this paragraph:

- (i) an institution has a net short credit position where the credit spread increase or deterioration in the creditworthiness of the issuer or group of issuers of debt instruments would result in an increase in the fair value of the non-trading book;
- (ii) an institution will have a net short equity position where a decrease in the equity's price would result in an increase in the fair value of the non-trading book.

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6. An institution must assign to the trading book an instrument that meets the requirements of points (a) and (b) of paragraph 3 and is any of the following:
- (a) an instrument that is conclusively designated as being held for trading purposes under the accounting framework applicable to the institution;
 - (b) an instrument resulting from market-making activities;
 - (c) a share or unit in a CIU;
 - (d) a listed equity;
 - (e) a trading-related securities financing transaction (SFT), except for an SFT that is entered for liquidity management or not fair-valued; or
 - (f) an option that relates to credit or equity risk, including an embedded option from an instrument that is issued by the institution.
7. For the purposes of point (f) of paragraph 6, an institution must split such instruments that are issued by the institution out of its non-trading book into an embedded derivative part and a non-embedded derivative part. Institutions shall allocate only the embedded derivative part of the instrument to the trading book.
8. By way of derogation from paragraph 6, an institution may allocate an instrument listed in paragraph 6 to the non-trading book if:
- (a) the following requirements are met:
 - (i) the institution provides evidence that the instrument is not held for one of the reasons in paragraph 4; and
 - (ii) on an ongoing basis, the institution documents each instrument listed in paragraph 6 that is allocated to the non-trading book; and
 - (b) it has been granted a permission by the PRA to do so.

[Note: This is a permission under sections 144G and 192XC of *FSMA* to which Part 8 of the *Capital Requirements Regulations* applies]

9. An institution must assign to the non-trading book instruments that are not required to be assigned to the trading book in accordance with paragraphs 3 to 6.
10. An institution must be able to provide to the PRA on request a rationale for its holding of an instrument and for the assignment of an instrument to the non-trading book or the trading book in accordance with paragraph 4.

[Note: Paragraph 1 of ~~t~~This rule corresponds to Article 104(1) of the *CRR* as it applied immediately before revocation by the *Treasury*.]

ARTICLE 104a REASSIGNMENT OF POSITIONS BETWEEN THE TRADING BOOK AND THE NON-TRADING BOOK

1. An institution must not reassign any position between the trading book and non-trading book unless:
- (a) the position was not assigned as required by paragraphs 2 to 6, 9 and 10 of Article 104;
 - (b) the institution has been granted a permission by the PRA under paragraph 2; or
 - (c) the position is acquired by the institution on its trading book and is reassigned to the non-trading book on the same business day.

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An institution must immediately notify the PRA of a reassignment made under sub-paragraph (a).

2. An institution may only reassign an instrument between trading book and non-trading book (including a reassignment of an instrument by way of an outright sale made at arm's length) in extraordinary circumstances, if:

(a) all of the following requirements are met:

- (i) the reassignment is approved by the senior management of the institution;
- (ii) the reassignment is determined by internal review by the institution to be in compliance with the institution's policies on reassignment of positions;
- (iii) the reassignment is not motivated solely by market events (including, but not limited to, price movements and increased volatility), changes in the liquidity of the instrument or changes in the institution's reasons for holding the instrument;
- (iv) the institution publicly discloses the reassignment at its next reporting date; and
- (v) the institution provides to the PRA supporting documentation to demonstrate that the reassignment is necessary in light of an extraordinary circumstance; and

(b) it has been granted a permission by the PRA to do so.

The reassignment of an instrument made pursuant to a permission granted under this paragraph 2 shall be irrevocable.

[Note: This is a permission under sections 144G and 192XC of FSMA to which Part 8 of the *Capital Requirements Regulations* applies]

3. For the purpose of reassignments in paragraph 2, an institution must have in place policies that are updated at least annually that specify:

- (a) the description of the circumstances or criteria where a reassignment may be considered;
- (b) how the institution will identify an extraordinary circumstance;
- (c) the process for obtaining senior management approval for such a reassignment.

4. Where an institution reassigns an instrument between trading book and non-trading book in accordance with paragraphs 1 or 2, the institution shall calculate the net change in own funds requirements immediately before and after the reassignment. Where the net change is a reduction in own funds requirements, the institution shall hold an additional own funds requirement to their overall market risk own funds requirements that is equal to the net reduction. The institution shall hold that additional own funds requirement until the positions arising from the reassigned instrument mature or expire.

ARTICLE 104b REQUIREMENTS FOR TRADING DESK

1. For the purposes of the use of the internal model approach specified in point (c) of paragraph 1 of Article 325 in the Market Risk: General Provisions (CRR) Part, an institution shall establish a set of trading desks and shall allocate each of their trading book positions to one of those trading desks.

2. An institution shall at all times meet all the following requirements:

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- (a) the trading desks structure shall be consistent with the institution's organisational structure and not structured solely for the purpose of optimising own funds requirements;
 - (b) each trading desk shall have at least one head dealer, who shall have direct oversight over the trading desk;
 - (c) a trading desk may have a maximum of two head dealers with direct oversight over the trading desk, provided that their roles, responsibilities and authorities are either clearly separated or one head trader has ultimate oversight over the other;
 - (d) each dealer shall have a clearly defined trading product specialty or specialties;
 - (e) each trading desk shall have a well-defined and documented business strategy and objectives including an annual budget and regular management information reports (including revenue, costs and risk-weighted assets);
 - (f) each trading desk shall have clearly defined risk scope consistent with its defined objectives, which should include specification of the desk's overall risk class and permitted risk factors;
 - (g) each trading desk shall have a clear reporting line to senior management;
 - (h) each trading desk shall have a clear and formal compensation policy clearly linked to the defined objectives of the trading desk;
 - (i) the management team for each trading desk must have an annual plan for the budgeting and staffing of the trading desk;
 - (j) each trading desk must have a clear risk management structure, including:
 - (i) clearly defined trading limits that are reviewed at least annually by the institution's senior management; and
 - (ii) at least weekly appropriate risk management reports that include both profit and loss reports which are periodically reviewed, validated and modified as necessary by the institution's function responsible for product control, and internal and regulatory risk measure reports which should include trading desk value-at-risk measures, expected shortfall measures, sensitivities to risk factors, information on back-testing performance and p-value calculations; and
 - (k) each trading desk shall prepare, evaluate, and maintain, to be made available to the PRA if requested:
 - (i) inventory ageing reports;
 - (ii) daily limit reports including exposures, limit breaches, and follow-up action;
 - (iii) reports on intraday limits and respective utilisation and breaches for banks with active intraday trading; and
 - (iv) reports on the assessment of market liquidity.
3. For the purposes of calculating the own funds requirements for market risk internal models in accordance with point (b) of Article 325(1) of the Market Risk: General Provisions (CRR) Part, an institution shall treat all foreign exchange and commodity positions assigned to the non-trading book as if they were held on notional trading desks within the trading book.
4. For the purposes of calculating market risk own funds requirements in accordance with Article 325ba of the Market Risk: Internal Model Approach (CRR) Part, an institution which does not have a dedicated trading desk that deals solely with general interest rate internal hedges and

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related instruments in accordance with paragraph 9 of Article 106, shall treat all such positions that meet the criteria of paragraph 9 of Article 106 as if they were held on a separate notional trading desk within the trading book.

5. An institution is not required to meet the requirements of paragraph 2 in respect of the notional trading desks referred to in paragraphs 3 and 4.

[Note: Paragraphs 1 and 2 of this rule correspond to paragraphs 1 and 2 of Article 104b of CRR]

...

ARTICLE 106 INTERNAL HEDGES

...

3. By way of derogation from paragraphs 1 and 2, wWhen an institution hedges a non-trading book credit risk exposure or counterparty risk exposure using a credit derivativepositions booked in its trading book using an internal hedge, institutions shall ensure that the non-trading book exposure or counterparty risk exposure shall not be deemed to be hedged for the purposes of calculating risk-weighted exposure amounts unless the institution purchases from an eligible third party protection provider a corresponding credit derivative meeting the requirements for unfunded credit protection in the non-trading book. Without prejudice to point (h) of Article 299(2), where such third party protection is purchased and recognised as a hedge of a non-trading book exposure for the purposes of calculating capital requirements, institutions shall ensure that neither the internal nor external credit derivative hedge shall be included in the trading book for the purposes of calculating capital requirements. the institution shall recognise the internal hedge in the trading book and non-trading book only where the following requirements are met:
- (a) the institution enters into a set of one or more trading book positions with eligible third party protection providers that exactly matches the internal hedge; and
 - (b) the positions with the eligible third party protection provider meet the requirements for unfunded credit protection in the non-trading book as set out in Credit Risk Mitigation (CRR) Part.
4. When an institution hedges a non-trading book equity risk exposure using equity positions booked in its trading book as an internal hedge, the institution shall recognise the internal hedge in the trading book and non-trading book only where the following requirements are met:
- (a) the institution enters into a set of trading book positions with third parties that exactly matches the internal hedge; and
 - (b) the positions with the third parties are recognised as hedges of the institution's non-trading book equity risk exposure.
5. Where the requirements of paragraphs 3 or 4, as the case may be, are met, an institution shall:
- (a) recognise the internal hedge in the non-trading book calculation of own funds requirements for credit risk or in the calculation of own funds requirements for counterparty credit risk, as the case may be; and
 - (b) recognise both the internal hedge and the positions entered into with third parties in the trading book calculation of own funds requirements for market risk.
6. Where the requirements of paragraphs 3 or 4, as the case may be, are met, and the internal hedge is a credit position that is recognised as a hedge of a non-trading book counterparty credit risk position an institution may additionally recognise the internal hedge in the calculation of own funds requirements for CVA risk, subject to meeting the requirements in paragraph 12.

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7. Where requirements of paragraphs 3 or 4, as the case may be, are not met, an institution shall:
- (a) not recognise the internal hedge in the non-trading book calculation of own funds requirements for credit risk, in the calculation of own funds requirements counterparty credit, or in the trading book calculation of own funds requirements for market risk; and
 - (b) recognise the external positions in the trading book calculation of own funds requirements for market risk.
8. Where an internal hedge that meets the requirements in points (a) and (b) of paragraphs 3 or 4 would result in a net short credit or equity position in the non-trading book that is not recognised under the non-trading book calculation of own funds requirements for credit risk, the institution shall subtract the amount of that net short position from the total amount of the internal hedge for the purposes of calculating own funds requirements for both the trading book and non-trading book.
9. When an institution hedges non-trading book general interest rate risk exposures using interest rate positions booked in its trading book via an internal hedge which meets the criteria in paragraph 10A, the institution shall recognise the internal hedge in the trading book and non-trading book only where the following requirements are met:
- (a) the institution documents the internal hedge with respect to the non-trading book general interest rate risk being hedged and the sources of such risk;
 - (b) the institution allocates the internal hedge to a dedicated general interest rate internal hedge portfolio in the trading book:
 - (i) that is solely dedicated to internal hedging of general interest rate risks arising from the non-trading book; and
 - (ii) for which own funds requirements for market risk are calculated separately and added to the own funds requirements for market risk for other trading book positions;
 - (c) the institution recognises the internal hedge in the institutions' calculations for interest risk arising from non-trading book activities as part of their Internal Capital Adequacy Assessment; and
 - (d) the institution does not allocate other instruments to the dedicated general interest rate internal hedge portfolio, except for:
 - (i) instruments directly arising from transactions with third parties; and
 - (ii) internal hedges between the dedicated general interest rate internal hedge portfolio and the rest of the trading book where the trading book enters into a set of positions with third parties that exactly matches the internal hedge.
10. For internal hedges arising from point (d)(ii) of paragraph 9 and which meet the criteria in paragraph 10A, an institution shall include those internal hedges in both:
- (a) the calculation of own funds requirements for market risk for the dedicated general interest rate internal hedge portfolio in accordance with point (b)(ii) of paragraph 9; and
 - (b) the calculation of own funds requirements for market risk for the rest of the trading book.
- 10A. Paragraphs 9 and 10 apply to an internal hedge that is either:
- (a) intended to hedge general interest rate risk; or

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(b) would be mapped to the 'interest rate risk' risk category in accordance with Article 277 of the Counterparty Credit Risk (CRR) Part.

11. An institution shall exclude from the trading book calculation of market risk own funds requirements instruments directly arising from transactions with third parties where the instruments are recognised as eligible hedges in the calculation of own funds requirements for CVA risk.

12. An institution may recognise an internal hedge between the trading book and the portfolio of positions subject to own funds requirements for CVA risk where all of the following requirements are met:

(a) the institution recognises the internal hedge as an eligible hedge in the calculation of own funds requirements for CVA risk;

(b) the institution documents the internal hedge with respect to the CVA risk being hedged and the sources of such risk; and

(c) where the internal hedge would be subject to curvature risk, default risk or the residual risk add-on in accordance with the Market Risk: Alternative Standardised Approach Part, the institution enters into a set of trading book positions with third parties that exactly matches the internal hedge.

[Note: ~~This~~ Paragraphs 1 and 2 of this rule corresponds to paragraphs 1 and 2 of Article 106 of the CRR as it applied immediately before revocation by the *Treasury*.]

4 RULES SUPPLEMENTING ARTICLE 105 ON STANDARDS FOR PRUDENTIAL VALUATION (PREVIOUSLY REGULATION (EU) NO 2016/101)

...

ARTICLE 17 CALCULATION OF OPERATIONAL RISK AVA

...

~~2. Where an institution applies the Advanced Measurement Approach for Operational Risk as specified in Part Three, Title III, Chapter 4 of the CRR, it may report a zero operational risk AVA on condition that it provides evidence that the operational risk relating to valuation processes, as determined in accordance with paragraph 1, is fully accounted for by the Advanced Measurement Approach calculation. [Deleted]~~

~~3. In other cases than those referred to in paragraph 2, the An institution shall calculate an operational risk AVA of 10% of the sum of the aggregated category level AVAs for market price uncertainty and close-out costs.~~

...

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Annex P

Amendments to the Market Risk Part

This Part is deleted.

Part

MARKET RISK [DELETED]

This Part has been deleted in its entirety.

Near-final part 1

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

Annex Q

Amendments to the Credit Valuation Adjustment Risk (CRR) Part

This Part is deleted.

Part

CREDIT VALUATION ADJUSTMENT RISK (CRR)

[DELETED]

This Part has been deleted in its entirety.

Near-final part 1

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

Annex R

Amendments to the Counterparty Credit Risk (CRR) Part

In this Annex new text is underlined and deleted text is struck through.

Part

COUNTERPARTY CREDIT RISK (CRR)

1 APPLICATION AND DEFINITIONS

...

1.2 In this Part, the following definitions shall apply:

alpha add-on

means the value calculated as:

(a) the exposure value of the netting set as at 1 July 2025 using the formula in Article 274(2) where $\alpha = 1.4$; less

(b) the exposure value of the netting set as at 1 July 2025 using the formula in Article 274(2) where $\alpha = 1$.

...

non-financial counterparty

means a non-financial counterparty as defined in point (9) of Article 2 of Regulation (EU) No 648/2012 or an undertaking that would be a non-financial counterparty if it was established in the UK.

...

pension scheme arrangement

means a counterparty referred to in point (10) of Article 2 of Regulation (EU) No 648/2012 or a counterparty that would fall within point (10) of Article 2 of Regulation (EU) No 648/2012 if it was recognised or established in the UK.

...

SECTION 3 STANDARDISED APPROACH FOR COUNTERPARTY CREDIT RISK

ARTICLE 274 EXPOSURE VALUE

...

2. Institutions shall calculate the exposure value of a netting set under the standardised approach for counterparty credit risk as follows:

Exposure value = $\alpha \cdot (RC + PFE)$

where:

RC = the replacement cost calculated in accordance with Article 275; and

PFE = the potential future exposure calculated in accordance with Article 278;

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$\alpha = 1.4$, unless the counterparty is a *non-financial counterparty* or a *pension scheme arrangement*, in which case, $\alpha = 1$.

2A. (1) Subject to sub-paragraph 2, for transactions entered into prior to 1 July 2025 with a counterparty referred to in 7.1(1)(a) or (b) of the Credit Valuation Adjustment Risk Part, an institution shall add the following percentages of the *alpha add-on* to the exposure value of the netting set:

(a) during the period from and including 1 July 2025 to and including 31 December 2025, 100%;

(b) during the period from and including 1 January 2026 to and including 31 December 2026, 80%;

(c) during the period from and including 1 January 2027 to and including 31 December 2027, 60%;

(d) during the period from and including 1 January 2028 to and including 31 December 2028, 40%;

(e) during the period from and including 1 January 2029 to and including 31 December 2029, 20%.

(2) An institution is not required to add the percentages of the *alpha add-on* required by paragraph 1 to the exposure value of the netting set from the date where it ceases to apply the treatment in 7.1(1) or (2) of the Credit Valuation Adjustment Risk Part.

2B. Paragraph 2A of this Article does not apply for the purpose of the calculation of an institution's *leverage ratio* in accordance with the *Leverage Ratio (CRR) Part*.

...

ARTICLE 306 OWN FUNDS REQUIREMENTS FOR TRADE EXPOSURES

...

4. An institution shall calculate the risk-weighted exposure amounts for its trade exposures with CCPs for the purposes of ~~Article 92(3)~~ paragraph 3 of Required Level of Own Funds (CRR) Part Article 92 as the sum of the exposure values of its trade exposures with CCPs, calculated in accordance with paragraphs 2 and 3 of this Article, multiplied by the risk weight determined in accordance with paragraph 1 of this Article.

[Note: This rule corresponds to Article 306 of the *CRR* as it applied immediately before revocation by the *Treasury*.]

...

ARTICLE 308 OWN FUNDS REQUIREMENTS FOR PRE-FUNDED CONTRIBUTIONS TO THE DEFAULT FUND OF A QCCP

...

3. An institution shall calculate the risk-weighted exposure amounts for exposures arising from that institution's pre-funded contribution to the default fund of a QCCP for the purposes of ~~Article 92(3)~~ paragraph 3 of Required Level of Own Funds (CRR) Part Article 92 as the own funds requirement, calculated in accordance with paragraph 2 of this Article, multiplied by 12.5.

...

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ARTICLE 309 OWN FUNDS REQUIREMENTS FOR PRE-FUNDED CONTRIBUTIONS TO THE DEFAULT FUND OF A NON-QUALIFYING CCP AND FOR UNFUNDED CONTRIBUTIONS TO A NON-QUALIFYING CCP

...

2. An institution shall calculate the risk-weighted exposure amounts for exposures arising from that institution's contribution to the default fund of a non-qualifying CCP for the purposes of ~~Article 92(3)~~ paragraph 3 of Required Level of Own Funds (CRR) Part Article 92 as the own funds requirement, calculated in accordance with paragraph 1 of this Article, multiplied by 12.5.

...

Near-final part 1

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

Annex S

Amendments to the Benchmarking of Internal Approaches Part

In this Annex, new text is underlined and deleted text is struck through.

...

2 SUPERVISORY BENCHMARKING OF INTERNAL APPROACHES FOR CALCULATING OWN FUNDS REQUIREMENTS

2.1 ~~Except for operational risk, a~~ firm that is permitted to use *internal approaches* for the calculation of risk weighted exposure amounts or *own funds* requirements must report annually to the PRA:

...

Near-final part 1

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

Annex T

Amendments to the Operational Risk (CRR) Part

This Part is deleted.

Part

OPERATIONAL RISK (CRR) [DELETED]

This Part has been deleted in its entirety.

Near-final part 1

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

Annex U

Amendments to the Disclosure (CRR) Part

This Annex is left intentionally blank.

Near-final part 1

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

Annex V

Amendments to the Regulatory Reporting Part

This Annex is left intentionally blank.

Near-final part 1

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

Annex W

Amendments to the Reporting (CRR) Part

This Annex is left intentionally blank.

Near-final part 1

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

Annex X

Amendments to the Reporting Pillar 2 Part

This Annex is left intentionally blank.

Near-final part 1

This is a partial draft Instrument to accompany PS17/23. It includes provisions relating to 'market risk', 'CVA' and 'operational risk'. Provisions relating to credit risk will be the subject of another near-final policy statement.

Annex Y

Amendments to the Interpretation Part

In this Annex new text is underlined and deleted text is struck through.

...

2 INTERPRETIVE PROVISIONS

...

- 2.11 Any reference in *CRR rules* or rules made under section 192XA *FSMA* to the granting of a waiver, approval, permission or other form of consent by the *competent authority* or by the *PRA* is a reference to the giving of a permission by the *PRA* pursuant to section 144G or section 192XC of *FSMA*, exercisable in accordance with the conditions as set out in those rules for the exercise of that waiver, approval, permission or other form of consent.

...

Near-final part 1