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ANNEX XXII - Disclosure of the use of the IRB Approach to credit risk (excluding counterparty credit risk)

Table UKB CRE – Qualitative disclosure requirements related to the IRB approach. Flexible table.

1. Institutions shall apply the instructions provided below in this Annex in order to complete table UKB CRE as presented in Annex XXI of Chapter 6 of the Disclosure (CRR) Part and in application of Article 452(a-f) of the Disclosure (CRR) Part of the PRA Rulebook. For the purposes of this Annex, references to the CRR shall be interpreted to include a reference to the relevant CRR rule, where appropriate.

Row reference	Legal references and instructions	
	Explanation	
(a)	Article 452(a) of the Disclosure (CRR) Part	When disclosing information on 'the scope of the PRA's permission of the approach or approved transition' in accordance with Article 452(a) of the Disclosure (CRR) Part, institutions shall describe the main characteristics of the rating systems used under the IRB approach for which permission has been granted by the PRA and the types of exposures covered by these rating systems. Institutions shall also describe the types of exposures for which they have permission to use permanent partial use of the Standardised Approach in accordance with Article 150(1) of the Credit Risk: Internal Ratings Based Approach (CRR) Part and which are under their IRB roll-out plans in accordance with Article 148(1) of the Credit Risk: Internal Ratings Based Approach (CRR) Part. The description shall be provided at the group level.
(b)	Article 452(c) of the Disclosure (CRR) Part	The description of the control mechanisms for rating systems shall cover the estimation of risk parameters, including internal model development and calibration, as well as controls in the application of the models and changes to rating systems. In accordance with Article 452(c)(i-iv) of the Disclosure (CRR) Part the description of the role of the functions referred to above shall also include: <ol style="list-style-type: none">the relationships between the risk management function and the internal audit function;the processes and methods for the reviews of the rating systems, including regular reviews of estimates and validations;the procedures and organisational arrangements to ensure the independence of the function in charge of reviewing the models (validation function) from the functions responsible for model development and calibration; andthe procedure to ensure the accountability of the functions in charge of developing and reviewing the models.
(c)	Article 452(d)	Institutions shall specify the role of the functions involved in the

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	of the Disclosure (CRR) Part	model development, calibration, approval and subsequent changes of the rating systems.
(d)	Article 452(e) of the Disclosure (CRR) Part	Institutions shall disclose the scope and main content of management reporting related to IRB models referred to in Article 189 of the Credit Risk: Internal Ratings Based Approach (CRR) Part, as well as addressees and frequency of such reporting.
(e)	Article 452(f) of the Disclosure (CRR) Part	<p>The disclosure of the internal rating systems by exposure class shall include the number of key models used in each exposure class with respect different types of exposures, and a brief description of the main differences among the models within the same portfolio. It shall also include a description of the main characteristics of the key approved models, in particular:</p> <ul style="list-style-type: none"> (i) the definitions, methods and data for estimation and validation of PD, including estimation and validation of PDs for low default portfolios, any applicable regulatory floors, and the drivers for differences observed between PD estimates and actual default rates at least for the last three years; (ii) where applicable, the definitions, methods and data for the estimation and validation of LGD, including estimation and validation of downturn LGD, information on how LGDs are estimated for low default portfolio, and the average time lapse between the default event and the closure of the exposure; and (iii) the definitions, methods and data for estimation and validation of conversion factors and EADs, including assumptions employed in the derivation of those estimates.
(f)	Article 452(a) of the Disclosure (CRR) Part	Institutions shall disclose the approach taken to assign risk weights to equity exposures including the use of the IRB equity transitional methodology or the end-state Standardised Approach risk weights.

**Template UKB CR6 – IRB approach – Credit risk exposures by exposure class and PD range.
 Fixed template.**

2. Institutions shall apply the instructions provided below in this Annex in order to complete template UKB CR6 as presented in Annex XXI of Chapter 6 of the Disclosure (CRR) Part and in application of Article 452(g)(i-v) of the Disclosure (CRR) Part, in order to provide information on the main parameters used for the calculation of capital requirements for the IRB approach. Information disclosed in this template shall not include exposures subject to the slotting approach. This template excludes counterparty credit risk (CCR) exposures (Counterparty Credit Risk (CRR) Part and Chapter 6 of Title II of Part 3 of the CRR), exposures in securitisation positions, and non-credit obligation asset exposures.

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Column reference	Legal references and instructions
Explanation	
a	<p>PD range:</p> <p>This is a fixed PD range which shall not be altered. In case that the data on defaulted exposures in accordance with Article 178 of the Credit Risk: Internal Ratings Based Approach (CRR) Part is further broken down in accordance with possible definitions for categories of defaulted exposures, the definitions and amounts for categories of defaulted exposures shall be explained in an accompanying narrative.</p> <p>Exposures shall be allocated to an appropriate bucket of the fixed PD range % based on the PD estimated for each obligor (pre-PD input floors as set out in Article 160(1) and 163(1) of CRR Credit Risk: Internal Ratings Based Approach (CRR) Part) assigned to this exposure class (without considering any substitution effects due to CRM). All defaulted exposures shall be included in the bucket representing PD of 100%.</p>
b	<p>On-balance sheet exposures:</p> <p>Exposures shall be reported without taking into account any credit risk adjustments, credit risk mitigation and any conversion factors.</p>
c	<p>Off-balance sheet exposures pre-conversion factors (CCF):</p> <p>Nominal values of exposures shall be reported as referred to in Article 166C(1) and 166D(1) of the Credit Risk: Internal Ratings Based Approach (CRR) Part without taking into account any credit risk adjustments, credit risk mitigation and any conversion factors, neither own estimates nor conversion factors.</p> <p>Off-balance sheet exposures comprise all committed but undrawn amounts and all off-balance sheet items, as listed in Table A1 in Article 111 of the Credit Risk: Standardised Approach (CRR) Part.</p>
d	<p>Exposure weighted average CCF:</p> <p>For all exposures included in each bucket of the fixed PD scale, the average conversion factor used by institutions in their calculation of risk-weighted exposure amounts, weighted by the off-balance sheet exposure pre-CCF as disclosed in column c.</p> <p>For exposures subject to the Advanced IRB Approach for which EAD is estimated directly, institutions shall calculate conversion factors by dividing, for each exposure, point (a) by point (b) below:</p> <ul style="list-style-type: none"> (a) The estimated EAD for the facility minus any on-balance sheet exposure for that facility (gross of provisions). (b) The nominal value of any off-balance sheet exposure for that facility.
e	<p>Exposure value post CCF and post CRM:</p> <p>Exposure value in accordance with Article 166A to 166D of the Credit Risk: Internal Ratings Based Approach (CRR) Part.</p> <p>This column includes the sum of exposure value of on-balance sheet exposures</p>

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	and off-balance sheet exposures post conversion factors and credit risk mitigation.
f	<p>Exposure weighted average PD (%):</p> <p>For all exposures included in each bucket of the fixed PD range, the average PD estimate post-PD input floors as set out in Article 160(1) and Article 163(1) of the Credit Risk: Internal Ratings Based Approach (CRR) Part and exposure-level risk weight floors in accordance with Article 160(4), as referred to in Article 161(3), and Article 163(4), as referred to in Article 164(5) of the Credit Risk: Internal Ratings Based Approach (CRR) Part of each obligor, weighted by the exposure value post-CCF, and post-CRM.</p>
g	<p>Number of obligors:</p> <p>The number of legal entities or obligors allocated to each bucket of the fixed PD range, which were separately rated, regardless of the number of different loans or exposures granted.</p> <p>Joint obligors shall be treated the same as for the purpose of PD calibration. Where different exposures to the same obligor are separately rated, they shall be counted separately. Such a situation may take place within the retail exposure class if the definition of default is applied at the level of individual credit facility in accordance with the last sentence of Article 178(1) of the Credit Risk: Internal Ratings Based Approach (CRR) Part, or if separate exposures to the same obligor are assigned to different obligor grades in accordance with the second sentence Article 172(1)(e) of the Credit Risk: Internal Ratings Based Approach (CRR) Part in other exposure classes.</p>
h	<p>Exposure weighted average LGD (%):</p> <p>For all exposures included in each bucket of the fixed PD range, the average of the LGD estimates for each exposure, weighted by the exposure value post-CCF and post-CRM as disclosed in column e.</p> <p>The LGD disclosed shall correspond to the final LGD estimate used in the calculation of risk-weighted amounts obtained after considering any CRM effects and downturn conditions where relevant. LGD disclosed shall take into account the input floors specified in Articles 161(5) and 164(4) of the Credit Risk: Internal Ratings Based Approach (CRR) Part. exposure-level risk weight floors in accordance with Article 160(4), as referred to in Article 161(3), and Article 163(4), as referred to in Article 164(5) of the Credit Risk: Internal Ratings Based Approach (CRR) Part</p> <p>For defaulted exposures under the AIRB approach, provisions laid down in Article 181(1)(h) of the Credit Risk: Internal Ratings Based Approach (CRR) Part shall be taken into account. The LGD disclosed shall correspond to the estimate of LGD in-default in accordance with the applicable estimation methodologies.</p>
i	<p>Exposure-weighted average maturity (years):</p> <p>For all exposures included in each bucket of the fixed PD range, the average maturity of each exposure, weighted by the exposure value post-CCF as disclosed in column e.</p>

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	<p>The value of maturity disclosed shall reflect Article 162 of the Credit Risk: Internal Ratings Based Approach (CRR) Part. The average maturity shall be disclosed in years.</p> <p>This data shall not be disclosed for the exposure values for which the maturity is not an element in the calculation of risk-weighted exposure amounts in accordance with the Credit Risk: Internal Ratings Based Approach (CRR) Part of the PRA Rulebook. This means that this column shall not be filled in for the exposure class "retail".</p>
j	<p>Risk-weighted exposure amount:</p> <p>For exposures to institutions and corporates, the risk-weighted exposure amount calculated in accordance with Article 153 of the Credit Risk: Internal Ratings Based Approach (CRR) Part. For retail exposures, the risk-weighted exposure amount calculated in accordance with Article 154 of the Credit Risk: Internal Ratings Based Approach (CRR) Part.</p> <p>The risk-weighted exposure amount shall include any post-model adjustments, unrecognised exposure adjustments and the mortgage risk weight floor in accordance with Articles 153(5A) and 154(4A) of the Credit Risk: Internal Ratings Based Approach (CRR) Part.</p>
k	<p>Density of risk-weighted exposure amounts:</p> <p>Ratio between the sum of risk-weighted exposure amounts as disclosed in column j and the exposure value as disclosed in column e.</p>
l	<p>Expected loss amount:</p> <p>The expected loss amount calculated in accordance with Article 158 of the Credit Risk: Internal Ratings Based Approach (CRR) Part, including any post-model adjustments as per Article 158(6A) of the Credit Risk: Internal Ratings Based Approach (CRR) Part.</p> <p>The expected loss amount to be disclosed shall be based on the actual risk parameters used in the internal rating system approved by the PRA.</p>
m	<p>Value adjustments and provisions:</p> <p>Specific and general credit risk adjustments in accordance with the Commission Delegated Regulation (EU) 183/2014¹ as it applies in the UK, additional value adjustments in accordance with Articles 34 CRR and 110 of the Credit Risk: General Provisions (CRR) Part allocated to each bucket on the fixed PD range. These value adjustments and provisions are those considered for the implementation of Article 159 of the Credit Risk: Internal Ratings Based Approach</p>

¹ COMMISSION DELEGATED REGULATION (EU) No 183/2014 of 20 December 2013 supplementing Regulation (EU) No 575/2013 of the European Parliament and of the Council on prudential requirements for credit institutions and investment firms, with regard to regulatory technical standards for specifying the calculation of specific and general credit risk adjustments.

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	(CRR) Part.
	General provisions shall be disclosed by assigning the amount pro rata – in accordance with the expected loss of different obligor grades.

Row reference	Legal references and instructions
	Explanation
Exposure class X	For exposures subject to the AIRB approach, institutions shall disclose the information required in this template separately for the exposure classes subject to that permission. For exposures subject to the FIRB approach, institutions shall disclose the information on the relevant exposures separately. Institutions shall not disclose information on exposures subject to the slotting approach in this template.
AIRB	<p>Exposure class X</p> <p>Institutions shall disclose a separate template for the following categories of exposures:</p> <ol style="list-style-type: none"> 1. Corporates (Article 147(2)(c) of the Credit Risk: Internal Ratings Based Approach (CRR) Part) <ol style="list-style-type: none"> 1.1 Specialised lending (Article 147(2)(c)(i) of the Credit Risk: Internal Ratings Based Approach (CRR) Part) 1.2 Other general corporates – SMEs (in accordance with Article 147(2)(c)(iii) of the Credit Risk: Internal Ratings Based Approach (CRR) Part read alongside the definition of SME in the Glossary Part) 1.3 Other general corporates – non-SMEs (Article 147(2)(c)(iii) of the Credit Risk: Internal Ratings Based Approach (CRR) Part and not reported under point 1.1 or 1.2) 2. Retail <ol style="list-style-type: none"> 2.1 Secured by residential immovable property – SMEs (in accordance with Article 147(2)(d)(ii) of the Credit Risk: Internal Ratings Based Approach (CRR) Part read alongside the definition of SME in the Glossary Part) 2.2 Secured by residential immovable property – non-SMEs (in accordance with Article 147(2)(d)(ii) of the Credit Risk: Internal Ratings Based Approach (CRR) Part and not reported under 2.1) 2.3 Secured by commercial immovable property – SMEs (retail exposures to SMEs secured by immovable property and not reported under 2.1 or 2.2. For the purpose of classification as SME, institutions shall use the definition in the Glossary Part) CRR) 2.4 Secured by commercial immovable property – non-SMEs (retail exposures secured by immovable property not reported under 2.1, 2.2 and 2.3) 2.5 Qualifying revolving retail exposures (Article 147(2)(d)(i) of the Credit Risk: Internal Ratings Based Approach (CRR) Part) 2.6 Other – SMEs (in accordance with Article 147(2)(d) of the Credit Risk: Internal Ratings Based Approach (CRR) Part. For the purpose of classification as SME, institutions shall use the definition in the Glossary Part)

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	<p>2.7 Other – non-SMEs (in accordance with Article 147(2)(d)(iii) of the Credit Risk: Internal Ratings Based Approach (CRR) Part and not reported under 2.6)</p> <p>3. Total</p> <p>The total exposures row shall be included at the end of each separate template per category of exposure.</p>
FIRB	<p>Exposure class X</p> <p>Institutions shall disclose a separate template for the following categories of exposures:</p> <ol style="list-style-type: none"> 1. Institutions (Article 147(2)(b) of the Credit Risk: Internal Ratings Based Approach (CRR) Part) 2. Corporates (Article 147(2)(c) of the Credit Risk: Internal Ratings Based Approach (CRR) Part) <ul style="list-style-type: none"> 2.1 Specialised lending (Article 147(2)(c)(i) of the Credit Risk: Internal Ratings Based Approach (CRR) Part. This shall include specialised lending exposures subject to the slotting approach) 2.2 Financial corporates and large corporates (Article 147(2)(c)(ii) of the Credit Risk: Internal Ratings Based Approach (CRR) Part) 2.3 Other general corporates – SMEs (in accordance with Article 147(2)(c)(iii) of the Credit Risk: Internal Ratings Based Approach (CRR) Part read alongside the definition of SME in the Glossary Part) 2.4 Other general corporates – non-SMEs (Article 147(2)(c)(iii) of the Credit Risk: Internal Ratings Based Approach (CRR) Part not reported under 2.3) 3. Total <p>The total exposures row shall be included at the end of each separate template per category of exposure.</p>

Template UKB CR6-A – IRB approach – Scope of the use of IRB approach and SA. Fixed template.

3. Institutions calculating risk-weighted exposure amounts under the IRB approach to credit risk shall apply the instructions provided below in order to complete template UKB CR6-A as presented in Annex XXI of Chapter 6 of the Disclosure (CRR) Part and in application of Article 452(b) of the Disclosure (CRR) Part.
4. For the purpose of this template, institutions shall allocate their exposures as being subject to the Standardised Approach and the IRB approach in accordance with Article 147A of the Credit Risk: Internal Ratings Based Approach (CRR) Part and assign exposures to roll-out classes in accordance with Article 147B of the Credit Risk: Internal Ratings Based Approach (CRR) Part. This template excludes counterparty credit risk (CCR) exposures (Counterparty Credit Risk (CRR) Part and Chapter 6 of Title II of Part Three CRR), and exposures in securitisation positions.

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5. Where these instructions refer to exposures values for exposures subject to the Standardised Approach, institutions shall refer to the Credit Risk: Standardised Approach (CRR) Part and the Credit Risk Mitigation (CRR) Part. Where these instructions refer to exposure values for exposures subject to the IRB Approach, institutions shall refer to the Credit Risk: Internal Ratings Based Approach (CRR) Part and the Credit Risk Mitigation (CRR) Part.
6. Institutions shall explain in the accompanying narrative to the template any material difference between the exposure value as defined in Article 166A to 166D of the Credit Risk: Internal Ratings Based Approach (CRR) Part for IRB exposures as disclosed in column a of the template and the exposure value for the same exposures in accordance with Article 429(4) of the Leverage Ratio (CRR) Part, as disclosed in columns b and d.

Column reference	Legal references and instructions
Explanation	
a	<p>Exposure value as defined in Article 166A to 166D of the Credit Risk: Internal Ratings Base Approach (CRR) Part for exposures subject to the Internal Ratings Based Approach.</p> <p>Institutions shall disclose in this column the total exposure value as defined in Article 429(4) of the Leverage Ratio (CRR) Part, for exposures subject to the IRB approach for each roll-out class.</p>
b	<p>Total exposure value for exposures subject to either the Standardised Approach or to the Internal Ratings Based Approach:</p> <p>Institutions shall disclose the total exposure value in accordance with Article 429(4) of the Leverage Ratio (CRR) Part including exposures under the SA and IRB approach for each roll-out class.</p>
c	<p>Percentage of total exposure value subject to the permanent partial use of the Standardised Approach (%):</p> <p>Institutions shall disclose the percentage of the total exposure value for each roll-out class that is subject to the Standardised Approach in accordance with a permission granted under Article 150(1) of the Credit Risk: Internal Ratings Based Approach (CRR) Part. Institutions shall calculate this percentage by dividing (1) by (2) below:</p> <p>(1) Total exposure value for all exposures subject to the SA in accordance with Article 150(1) of the Credit Risk: Internal Ratings Based Approach (CRR) Part for that roll-out class.</p> <p>(2) Total exposure value for all exposures in that roll-out class as disclosed in column b.</p>
d	<p>Percentage of total exposure value subject to the Internal Ratings Based Approach (%):</p> <p>Institutions shall disclose the percentage of the total exposure value for each roll-out class for exposures that are subject to the IRB approach. Institutions shall calculate this percentage by dividing (1) by (2) below:</p> <p>(1) Total exposure value for all exposures subject to the IRB approach in accordance with a permission granted under Rule 1.1 and Article 143(1) of the Credit Risk: Internal Ratings Based Approach (CRR) Part for each</p>

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	<p>roll-out class. This shall include-exposures subject to the AIRB approach, the FIRB approach and the slotting approach.</p> <p>(2) Total exposure value for all exposures in that roll-out class as disclosed in column b.</p>
e	<p>Percentage of total exposure value subject to a roll-out plan (%):</p> <p>Institutions shall disclose the percentage of the total exposure value for exposures that are subject to a roll-out plan for each roll-out class. To calculate this percentage the institution shall divide point (1) by point (2) below:</p> <p>(1) The total exposure value for exposures subject to an IRB roll-out plan in accordance with Article 148(1) for each roll-out class.</p> <p>(2) The total exposure value for all exposures in that roll-out class as disclosed in column b.</p> <p>Point (1) shall include: exposures currently subject to the Standardised Approach where the institution's roll-out plan states that plan to apply the AIRB approach, the FIRB approach or the slotting approach.</p>

Row number	Legal references and instructions
	Explanation
3.9 - 3.16	Institutions shall include the information in template CR 6-A by roll-out class in accordance with the breakdown of roll-out classes included in the rows of the template and in accordance with Article 147B of the Credit Risk: Internal Ratings Based (CRR) Part.
5	Institutions shall report the total exposure value for all roll-out classes in columns a and b and shall report the percentages required for all roll-out classes in columns c, d and e.

Template UKB CR7 – IRB approach – Effect on the Risk-Weighted Exposure amounts of credit derivatives used as CRM techniques. Fixed template.

7. Institutions shall apply the instructions provided below in this Annex in order to complete template UKB CR7 as presented in Annex XXI of Chapter 6 of the Disclosure (CRR) Part and in accordance with Article 453(j) of the Disclosure (CRR) Part. Institutions shall supplement the template with a narrative to explain the effect of credit derivatives on risk-weighted exposure amounts. This template excludes counterparty credit risk (CCR) exposures (Counterparty Credit Risk (CRR) Part of the PRA and Chapter 6 of Title II of Part Three CRR), exposures in securitisation positions and other non-credit obligation assets.

Column reference	Legal references and instructions
	Explanation
a	Pre-credit derivatives risk-weighted exposure amount (RWEA): Hypothetical RWEA calculated assuming only the absence of credit risk mitigation recognition of credit derivatives as specified in Article 204 of the Credit Risk Mitigation (CRR) Part. The amounts shall be presented in the exposure classes relevant for the

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	exposures to the original obligor.
b	Post-credit derivatives risk-weighted exposure amount: RWEA calculated taking into account the impact of the credit derivatives as credit risk mitigation. Where institutions substitute the risk weight or the risk parameters of the obligor with the risk weight or risk parameters of the protection provider, the RWEA shall be presented in the exposure class relevant for direct exposures to the protection provider.

Row reference	Legal references and instructions
	Explanation
1 to 7	<p>Institutions shall include the breakdown of pre-credit derivatives RWEA and post-credit derivatives risk-weighted exposure by exposure class and subclass, in accordance with the exposure classes and subclasses listed in Article 147 of the Credit Risk: Internal Ratings Based Approach (CRR) Part with further breakdown as included in the template, and separately for exposures under the FIRB approach, exposures under the AIRB approach, and exposures under the slotting approach. Institutions shall disclose under rows 1, 4 and 7 the subtotals for FIRB exposures, AIRB exposures and slotting exposures respectively.</p> <p>Where exposure subclasses are further broken down by SME and non-SME, the definition of SME shall be in accordance with the Glossary Part.</p> <p>Retail – secured by commercial immovable property corresponds to retail exposures secured by immovable property not included in Article 147(2)(d)(ii) of the Credit Risk: Internal Ratings Based Approach (CRR) Part.</p>
8	<p>TOTAL EXPOSURES (including FIRB exposures, AIRB exposures and slotting exposures)</p> <p>Total pre-credit derivatives risk-weighted exposure amount, and total post-credit derivatives risk-weighted exposure amount for all IRB exposures (including FIRB, AIRB and slotting exposures).</p>

Template UKB CR7-A – IRB approach – Disclosure of the extent of the use of CRM techniques

8. To the extent that an institution recognises the effect of CRM, it shall apply the instructions provided below in this Annex in order to complete template UKB CR7-A in accordance with Article 453(g) of the Disclosure (CRR) Part separately for exposures under the AIRB approach, the FIRB approach and the slotting approach. In case an item of funded credit protection applies to more than one exposure, the sum of the exposures considered secured by it may not exceed the value of the item of the credit protection.
- 8A. This template should be disclosed on a post-conversion factor basis. For columns b-l and o-p, this means that in each instance where CRM is recognised against an off-balance sheet exposure, the value of the CRM to be included in the numerator of the calculation shall be multiplied by the conversion factor that applies to the corresponding exposure. In any instance where CRM is recognised against an exposure or facility for which a firm estimates EAD, the value of CRM associated with that exposure or facility shall be multiplied by the

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ratio of EAD to the nominal value of that exposure or facility, where this ratio is capped at 100%.

Column reference	Legal references and instructions Explanation
a	Total exposures: Total exposure value, pre calculation of any CRM effects that reduce the exposure value and post conversion factors, in accordance with Articles 166A to 166D of the Credit Risk: Internal Ratings Based Approach (CRR) Part. Exposures shall be disclosed in accordance with the exposure class applicable to the obligor.
b	FCP - Part of exposures covered by financial collateral (%): Percentage of exposure value secured by financial collateral or on-balance sheet netting over total exposures as disclosed in column a. Firms shall include within the numerator all financial collateral, including cash collateral, debt securities, and gold, as listed in Articles 197 and 198 of the Credit Risk Mitigation (CRR) Part. For the FIRB approach: The value of collateral recognised under the Foundation Collateral Method included in the numerator shall be calculated as C_i , after the application of volatility adjustments and a maturity mismatch adjustment if relevant, as calculated in Articles 230 and 231 of the Credit Risk Mitigation (CRR) Part, and capped at the individual exposure value. For the AIRB approach: financial collateral recognised under the LGD Modelling Collateral Method. The amount to be included in the numerator shall be the estimated market value of the collateral, capped at the individual exposure value. For all IRB approaches, the numerator shall also include the value of recognised on balance sheet netting as calculated in accordance with Article 219 of the Credit Risk Mitigation (CRR) Part.
c	FCP - Part of exposures covered by other eligible collateral (%) Percentage of exposure value secured by other eligible collateral over total exposures as disclosed in column a. The values disclosed in this column shall be the sum of the values disclosed in columns d to f. For the FIRB approach: Collateral recognised under the Foundation Collateral Method. For the AIRB approach: other collateral recognised under the LGD Modelling Collateral Method in accordance with Articles 169A, 169B and 181(1)(e) of the Credit Risk: Internal Ratings Based Approach (CRR) Part.
d	FCP - Part of exposures covered by immovable property collateral (%): Percentage of exposure value secured by immovable property collateral in accordance with Article 199(2) of the Credit Risk Mitigation (CRR) Part, including leasing in accordance with Article 199(7) of the Credit Risk Mitigation (CRR) Part, over total exposures as disclosed in column a.

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	<p>For the FIRB approach, immovable property collateral, including leasing of immovable property, shall be included in the numerator where they are recognised under the Foundation Collateral Method. The value of collateral included in the numerator shall be calculated as C_i, after the application of volatility adjustments and a maturity mismatch adjustment if relevant, as calculated in Articles 230 and 231 of the Credit Risk Mitigation (CRR) Part, and shall be capped at the individual exposure value.</p> <p>For the AIRB approach: immovable property collateral recognised under the LGD modelling collateral method. The amount to be included in the numerator shall be the estimated market value of the collateral, capped at the individual exposure value.</p>
e	<p>Part of exposures covered by Receivables (%)</p> <p>Percentage of exposure value secured by receivables in accordance with Article 199(5) of the Credit Risk Mitigation (CRR) Part over total exposures as disclosed in column a.</p> <p>For the FIRB approach, receivables shall be included in the numerator where they are recognised under the Foundation Collateral Method. The value of collateral included in the numerator shall be calculated as C_i, after the application of volatility adjustments and a maturity mismatch adjustment if relevant, as calculated in Articles 230 and 231 of the Credit Risk Mitigation (CRR) Part, and shall be capped at the individual exposure value.</p> <p>For the AIRB approach: receivables recognised under the LGD modelling collateral method. The amount to be included in the numerator shall be the estimated market value of the collateral, capped at the individual exposure value.</p>
f	<p>Part of exposures covered by Other physical collateral (%)</p> <p>Percentage of exposure value secured by other physical collateral including leasing of those collaterals in accordance with Article 199(6) of the Credit Risk Mitigation (CRR) Part over total exposures as disclosed in column a.</p> <p>For the FIRB approach, other physical collateral shall be included in the numerator where they are recognised under the Foundation Collateral Method . The value of collateral included in the numerator shall be calculated as C_i, after the application of volatility adjustments and a maturity mismatch adjustment if relevant, as calculated in articles 230 and 231 of the Credit Risk Mitigation (CRR) Part, and shall be capped at the individual exposure value.</p> <p>For the AIRB approach: other physical collateral recognised under the LGD modelling collateral method. The amount to be included in the numerator shall be the estimated market value of the collateral, capped at the individual exposure value.</p>
g	<p>FCP - Part of exposures covered by Other funded credit protection (%)</p> <p>Percentage of exposure value secured by other funded credit protection over total exposures as disclosed in column a. The values disclosed in this column shall be the sum of the values disclosed in columns h, i and j.</p>
h	<p>FCP - Part of exposures covered by cash on deposit (%):</p> <p>Percentage of exposure value secured by cash or cash assimilated instruments held by third party institution in accordance with Article 200(1)(a) of the Credit Risk Mitigation (CRR) Part over total exposures as disclosed in column a.</p> <p>For the FIRB approach, cash or cash assimilated instruments that are held by a third party institution shall be included in the numerator where they are recognised under the other funded credit protection method. The value of</p>

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	<p>collateral included in the numerator shall be the covered part of the exposure as calculated under Article 235 or 236 of the Credit Risk Mitigation (CRR) Part.</p> <p>For the AIRB approach: cash or cash assimilated instruments held by a third party institution recognised under the LGD modelling collateral method. The amount to be included in the numerator shall be the estimated market value of the collateral, capped at the individual exposure value.</p>
i	<p>FCP - Part of exposures covered by life insurance policies (%): Percentage of exposure value secured by life insurance policies in accordance with article 200(1)(b) of the Credit Risk Mitigation (CRR) Part over total exposures as disclosed in column a.</p> <p>For the FIRB approach: life insurance properties recognised under the funded credit protection method. The value of collateral included in the numerator shall be the value of the life insurance policy, adjusted where relevant to reflect a currency mismatch, as set out in Article 232(2) of the Credit Risk Mitigation (CRR) Part, capped at the individual exposure value.</p> <p>For the AIRB approach: life insurance policies recognised under the LGD modelling collateral method. The amount to be included in the numerator shall be the estimated market value of the collateral, capped at the individual exposure value.</p>
j	<p>FCP - Part of exposures covered by instruments held by a third party (%): Percentage of exposure value secured by collateral in the form of instruments held by a third party in accordance with Article 200(1)(c) of the Credit Risk Mitigation (CRR) Part, over total exposures as disclosed in column a.</p> <p>For the FIRB approach, instruments that will be repurchased on request shall be included in the numerator where they are recognised under the other funded credit protection method. The value of collateral included in the numerator shall be the covered part of the exposure as calculated under Article 235 or 236 of the Credit Risk Mitigation (CRR) Part.</p> <p>For the AIRB approach: instruments that will be repurchased on request recognised under the LGD modelling collateral method. The amount to be included in the numerator shall be the estimated market value of the collateral, capped at the individual exposure value.</p>
k	<p>UFCP - Part of exposures covered by guarantees (%): Percentage of exposure value secured by guarantees in accordance with Article 203 of the Credit Risk Mitigation (CRR) Part over total exposures as disclosed in column a.</p> <p>For the FIRB approach: the numerator shall include guarantees recognised under the Risk Weight Substitution Method or Parameter Substitution Method. The amount to be included in the numerator shall be the covered part of the exposure as calculated under Article 235 or 236 of the Credit Risk Mitigation (CRR) Part.</p> <p>For the AIRB approach: the numerator shall include guarantees recognised under the LGD adjustment method. The amount to be include in the numerator shall reflect the internal valuation of the guarantee, capped at the exposure value.</p>
l	<p>UFCP - Part of exposures covered by credit derivatives (%): Percentage of exposure value secured by credit derivatives in accordance with</p>

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	<p>Article 204 of the Credit Risk Mitigation (CRR) Part over total exposures as disclosed in column a.</p> <p>For the FIRB approach: the numerator shall include credit derivatives recognised under the Risk Weight Substitution Method or Parameter Substitution Method. The amount to be included in the numerator shall be the covered part of the exposure as calculated under Article 235 or 236 of the Credit Risk Mitigation (CRR) Part.</p> <p>For the AIRB approach: the numerator shall include guarantees recognised under the LGD adjustment method. The amount to be included in the numerator shall reflect the internal valuation of the credit derivative, capped at the exposure value.</p>
m	<p>RWEA post all CRM assigned to the obligor exposure class:</p> <p>The risk-weighted exposure amounts calculated in accordance with Article 92(3)(a) of the Required Level of Own Funds (CRR) Part, including any reduction of RWEA due to the existence of funded or unfunded credit protection, including where the PD and LGD or the risk weight is substituted due to the existence of unfunded credit protection. Nevertheless, in all cases, including where the substitution approach is used, exposures are disclosed in the original exposure classes applicable to the obligor.</p>
n	<p>RWEA with substitution effects</p> <p>The risk-weighted exposure amounts calculated in accordance with Article 153 to 157 of the Credit Risk: Internal Ratings Based Approach (CRR) Part, including any reduction of RWEA due to the existence of funded or unfunded credit protection. Where the PD, the PD and LGD or the risk weight is substituted due to the existence of unfunded credit protection, exposures shall be disclosed in the exposure class applicable to the protection provider.</p>
o	<p>Part of the exposure covered by funded credit protection (FCP) (%)</p> <p>For exposures subject to the slotting approach, percentage of exposure value subject to funded credit protection recognised through either the financial collateral comprehensive method or on-balance sheet netting over total exposures disclosed in column a.</p> <p>The amount to be included in the numerator shall be the value of CVAM as calculated in Article 239 of the Credit Risk Mitigation (CRR) Part, plus the value of on-balance sheet netting as calculated in accordance with Article 219 of the Credit Risk Mitigation (CRR) Part.</p>
n	<p>Part of the exposure covered by unfunded credit protection (UFCP) (%)</p> <p>For exposures subject to the slotting approach, percentage of exposure value subject to recognised unfunded credit protection over total exposures disclosed in column a.</p> <p>The numerator shall include guarantees or credit derivatives recognised under the risk weight substitution method. The amount to be included in the numerator shall be the covered part of the exposure as calculated under Article 235 or 236 of the Credit Risk Mitigation (CRR) Part.</p>

Row reference	Legal references and instructions
	Explanation
	<p>This disclosure shall be made separately for exposures under AIRB approach, FIRB approach, and the slotting approach.</p>

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AIRB	<p>Institutions shall include the information on credit risk mitigation techniques included in this template by the following categories of exposure:</p> <ol style="list-style-type: none"> 1. Corporates (Article 147(2)(c) of the Credit Risk: Internal Ratings Based Approach (CRR) Part) <ol style="list-style-type: none"> 1.1 Specialised lending (Article 147(2)(c)(i) of the Credit Risk: Internal Ratings Based Approach (CRR) Part) 1.2 Purchased receivables (exposures which are purchased receivables in accordance with Article 157 of the Credit Risk: Internal Ratings Based Approach (CRR) Part that fall into the exposure class referred to in Article 147(2)(c) of the Credit Risk: Internal Ratings Based Approach (CRR) Part) 1.3 Other general corporates SMEs (in accordance with Article 147(2)(c)(iii) of the Credit Risk: Internal Ratings Based Approach (CRR) Part. read alongside the definition of SME in the Glossary Part) 1.4 Other general corporates non-SMEs (Article 147(2)(c)(iii) of the Credit Risk: Internal Ratings Based Approach (CRR) Part and not reported under point 1.1 or 1.2) 2. Retail <ol style="list-style-type: none"> 2.1 Secured by residential immovable property SMEs (in accordance with Article 147(2)(d)(ii) of the Credit Risk: Internal Ratings Based Approach (CRR) Part read alongside the definition of SME in the Glossary Part) 2.2 Secured by residential immovable property non-SMEs (in accordance with Article 147(2)(d)(ii) of the Credit Risk: Internal Ratings Based Approach (CRR) Part and not reported under 2.1) 2.3 Secured by commercial immovable property SMEs (Retail exposures to SMEs secured by immovable property and not reported under 2.1 or 2.2. For the purpose of classification as SME, institutions shall use the definition in the Glossary Part) 2.4 Secured by commercial immovable property non-SMEs (Retail exposures secured by immovable property not reported under 2.1, 2.2 and 2.3) 2.5 Qualifying revolving retail exposures (Article 147(2)(d)(i) of the Credit Risk: Internal Ratings Based Approach (CRR) Part) 2.6 Purchased receivables (exposures which are purchased receivables in accordance with Article 157 of the Credit Risk: Internal Ratings Based Approach (CRR) Part that fall into the exposure class referred to in Article 147(2)(d) of the Credit Risk: Internal Ratings Based Approach (CRR) Part) 2.7 Other SMEs (in accordance with Article 147(2)(d) of the Credit Risk: Internal Ratings Based Approach (CRR) Part. For the purpose of classification as SME, institutions shall use the definition in the Glossary Part) 2.8 Other - non-SMEs (in accordance with Article 147(2)(d)(iii) and not reported under 2.6) 3. Total
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FIRB	<p>Institutions shall include the information on credit risk mitigation techniques included in this template by the following categories of exposure:</p> <ol style="list-style-type: none"> 1. Institutions (Article 147(2)(b) of the Credit Risk: Internal Ratings Based Approach (CRR) Part). 2. Corporates (in accordance with Article 147(2)(c) of the Credit Risk: Internal Ratings Based Approach (CRR) Part). <ol style="list-style-type: none"> 2.1. Specialised lending exposures (in accordance with Article 147(2)(c)(i) of the Credit Risk: Internal Ratings Based Approach (CRR) Part). 2.2. Financial corporates and large corporates (in accordance with Article 147(2)(c)(ii) of the Credit Risk: Internal Ratings Based Approach (CRR) Part). 2.3. Purchased receivables (exposures which are purchased receivables in accordance with Article 157 of the Credit Risk: Internal Ratings Based Approach (CRR) Part that fall into the exposure class referred to in Article 147(2)(c) of the Credit Risk: Internal Ratings Based Approach (CRR) Part). 2.4. Other general corporates SMEs (in accordance with Article 147(2)(c)(iii) of the Credit Risk: Internal Ratings Based Approach (CRR) Part. For the purpose of classification as SME the reporting entities shall use the definition in the Glossary Part). 2.5. Other general corporates non-SMEs (in accordance with Article 147(2)(c)(iii) of the Credit Risk: Internal Ratings Based Approach (CRR) Part not reported under 2.3). 3. Total
Slotting	Institutions shall include the information on credit risk mitigation techniques included in this template for total exposures subject to the slotting approach.

Template UKB CR8 – RWEA flow statements of credit risk exposures under the IRB approach.

Fixed template.

9. Institutions shall apply the instructions provided below in this Annex in order to complete template UKB CR8 as presented in Annex XXI of Chapter 6 of the Disclosure (CRR) Part and in accordance with Article 438(h) of the Disclosure (CRR) Part. The information disclosed in this template excludes counterparty credit risk (CCR) exposures (Counterparty Credit Risk (CCR) Part and Chapter 6 of Title II of Part Three CRR).
10. Institutions shall disclose the flows of RWEA as the changes between the RWEA at the end of the disclosure reference date (as specified below in row 9) and the risk-weighted exposure amounts at end of the prior disclosure reference date (as specified below in row 1; in the case of quarterly disclosures, end-of-quarter prior to the quarter of the disclosure reference date). Institutions may complement their Pillar 3 disclosures by disclosing the same information for the three previous quarters.
11. Institutions shall supplement the template with a narrative commentary to explain figures disclosed in row 8 of the template, i.e. any other drivers that contribute significantly to RWEA variations.

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Column reference	Legal references and instructions
	Explanation
a	Total risk-weighted exposure amount for credit risk calculated under the IRB approach.

Row number	Legal references and instructions
	Explanation
1	Risk-weighted exposure amount at the end of the previous disclosure period
2	<p>Asset size (+/-):</p> <p>Change in the risk-weighted exposure amount between the end of the previous disclosure period and the end of the current disclosure period due to changes in asset size, including organic changes in book size and composition (including the origination of new businesses and maturing loans) but excluding changes in book size due to acquisitions and disposal of entities. Increases in risk-weighted exposure amounts shall be disclosed as a positive amount and decreases in risk-weighted exposure amounts shall be disclosed as a negative amount.</p>
3	<p>Asset quality (+/-):</p> <p>Change in the risk-weighted exposure amount between the end of the previous disclosure period and the end of the current disclosure period due to changes in asset quality, i.e. changes in the quality of the institution's assets due to changes in borrower risk, such as rating grade migration or similar effects. Increases in risk-weighted exposure amounts shall be disclosed as a positive amount and decreases in risk-weighted exposure amounts shall be disclosed as a negative amount.</p>
4	<p>Model updates (+/-):</p> <p>Change in the risk-weighted exposure amount between the end of the previous disclosure period and the end of the current disclosure period, due to model updates, i.e. changes due to implementation of new models, changes in the models, changes in model scope, or any other changes intended to address model weaknesses. Increases in risk-weighted exposure amounts shall be disclosed as a positive amount and decreases in risk-weighted exposure amounts shall be disclosed as a negative amount.</p>
5	<p>Methodology and policy (+/-):</p> <p>Change in the risk-weighted exposure amount between the end of the previous disclosure period and the end of the current disclosure period, due to methodology and policy, i.e. changes due to methodological changes in calculations driven by regulatory policy changes, including those resulting from revisions to existing regulations and new regulations, but excluding changes in models, which are included in row 4. Increases in risk-weighted exposure amounts shall be disclosed as a positive amount and decreases in risk-weighted exposure amounts shall be disclosed as a negative amount.</p>
6	<p>Acquisitions and disposals (+/-):</p> <p>Change in the risk-weighted exposure amount between the end of the previous disclosure period and the end of the current disclosure period, due to</p>

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	acquisitions and disposals, i.e. changes in book sizes due to acquisitions and/or disposals. Increases in risk-weighted exposure amounts shall be disclosed as a positive amount and decreases in risk-weighted exposure amounts shall be disclosed as a negative amount.
7	Foreign exchange movements (+/-): Change in the risk-weighted exposure amount between the end of the previous disclosure period and the end of the current disclosure period, due to foreign exchange movements, i.e. changes arising from foreign currency translation movements. Increases in risk-weighted exposure amounts shall be disclosed as a positive amount and decreases in risk-weighted exposure amounts shall be disclosed as a negative amount.
8	Other (+/-): Change in the risk-weighted exposure amount between the end of the previous disclosure period and the end of the current disclosure period, due to other drivers. This category shall be used to capture changes that cannot be attributed to any other category. Institutions shall further describe any other material drivers of risk-weighted amounts movements over the disclosure period included in this row in the accompanying narrative for this template. Increases in risk-weighted exposure amounts shall be disclosed as a positive amount and decreases in risk-weighted exposure amounts shall be disclosed as a negative amount.
9	Risk-weighted exposure amount at the end of the disclosure period

Template UKB CR9 – IRB approach – Back-testing of PD per exposure class. Fixed template.

12. Institutions shall apply the instructions provided below in this Annex in order to complete template UKB CR9 as presented in Annex XXI of Chapter 6 of the Disclosure (CRR) Part in application of Article 452(h) of the Disclosure (CRR) Part. When an institution makes use of both the FIRB approach and the AIRB approach, it shall disclose two separate sets of templates, one for FIRB and one for AIRB, with one template per exposure class in each set.
13. Institutions shall consider the models used within each exposure class and they shall explain the percentage of risk-weighted exposure amount of the relevant exposure class covered by the models for which back-testing results are disclosed here.
14. Institutions shall explain, in the accompanying narrative, the total number of obligors with short-term exposures at the disclosure date, indicating which exposure classes feature a larger number short-term contract obligors. Short-term contracts refer to contracts whose residual maturity is less than 12 months. Institutions shall also explain if there are overlapping windows in the calculation of long run average PD rates.
15. This template excludes counterparty credit risk (CCR) exposures (Counterparty Credit Risk (CRR) Part and Chapter 6 of Title II of Part Three CRR), securitisation positions, other non credit-obligation assets and equity exposures.

Column	Legal references and instructions
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reference	Explanation
a (AIRB)	<p>Exposure classes:</p> <p>Institutions shall disclose a separate template for the following exposure classes and subclasses:</p> <ol style="list-style-type: none"> 1. Corporates (Article 147(2)(c) of the Credit Risk: Internal Ratings Based Approach (CRR) Part) <ol style="list-style-type: none"> 1.2 Specialised lending (Article 147(2)(c)(i) of the Credit Risk: Internal Ratings Based Approach (CRR) Part) 1.3 Other general corporates SMEs (in accordance with Article 147(2)(c)(iii) of the Credit Risk: Internal Ratings Based Approach (CRR) Part. use read alongside the definition of SME in the Glossary Part) 1.4 Other general corporates non-SMEs (Article 147(2)(c)(iii) of the Credit Risk: Internal Ratings Based Approach (CRR) Part and not reported under point 1.1 or 1.2) 2. Retail <ol style="list-style-type: none"> 2.1 Secured by residential immovable property SMEs (in accordance with Article 147(2)(d)(ii) of the Credit Risk: Internal Ratings Based Approach (CRR) Part. For the purpose of classification as an SME the reporting entities shall use the definition in the Glossary Part) 2.2 Secured by residential immovable property non-SMEs (in accordance with Article 147(2)(d)(ii) of the Credit Risk: Internal Ratings Based Approach (CRR) Part and not reported under 2.1) 2.3 Secured by commercial immovable property SMEs (Retail exposures to SMEs secured by immovable property and not reported under 2.1 or 2.2. For the purpose of classification as SME institutions shall use the definition in the Glossary Part) 2.4 Secured by commercial immovable property non-SMEs (Retail exposures secured by immovable property not reported under 2.1, 2.2 and 2.3) 2.5 Qualifying revolving retail exposures (Article 147(2)(d)(i) of the Credit Risk: Internal Ratings Based Approach (CRR) Part) 2.6 Other SMEs (in accordance with Article 147(2)(d) of the Credit Risk: Internal Ratings Based Approach (CRR). For the purpose of classification as SME institutions shall use the definition in the Glossary Part) 2.7 Other - non-SMEs (in accordance with Article 147(2)(d)(iii) of the Credit Risk: Internal Ratings Based Approach (CRR) Part and not reported under 2.6) 3. Total
a (FIRB)	<p>Exposure classes: Institutions shall disclose a separate template for the following exposure classes and subclasses:</p> <ol style="list-style-type: none"> 1. Institutions (Article 147(2)(b) of the Credit Risk: Internal Ratings Based Approach (CRR) Part) 1. Corporates (Article 147(2)(c) of the Credit Risk: Internal Ratings Based Approach (CRR) Part) <ol style="list-style-type: none"> 2.1 Specialised lending exposures (Article 147(2)(c)(i) of the Credit Risk:

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	<p>Internal Ratings Based Approach (CRR) Part. This shall include specialised lending exposures subject to the slotting approach)</p> <p>2.2 Financial corporates and large corporates (Article 147(2)(c)(ii) of the Credit Risk: Internal Ratings Based Approach (CRR) Part)</p> <p>2.3 Other general corporates SMEs (Article 147(2)(c)(iii) of the Credit Risk: Internal Ratings Based Approach (CRR) Part. For the purpose of classification as SME the reporting entities shall use the definition in the Glossary Part)</p> <p>2.4 Other general corporates non-SMEs (Article 147(2)(c)(iii) of the Credit Risk: Internal Ratings Based Approach (CRR) Part not reported under 2.3)</p> <p>2 Total</p>
b	<p>PD range:</p> <p>This is a fixed PD range which shall not be altered.</p> <p>Exposures shall be allocated to an appropriate bucket of the fixed PD range based on the PD estimated at the beginning of the disclosure period for each obligor assigned to this exposure class (without considering any substitution effects due to CRM). All defaulted exposures shall be included in the bucket representing PD of 100%.</p>
c, d	<p>Number of obligors at the end of the previous year:</p> <p>Two sets of information are required:</p> <p>(i) the number of obligors at the end of the previous year (column c);</p> <p>Number of obligors at the end of the year subject to disclosure. In both cases, all obligors carrying a credit obligation at the relevant point in time shall be included.</p> <p>Institutions shall disclose the number of legal entities or obligors allocated to each bucket of the fixed PD range at the end of the previous year, which were separately rated, regardless of the number of different loans or exposures granted.</p> <p>Joint obligors shall be treated the same as for the purpose of PD calibration. Where different exposures to the same obligor are separately rated, they shall be counted separately. Such a situation may take place within the retail exposure class, where the definition of default is applied at the level of individual credit facility in accordance with the last sentence of Article 178(1) of the Credit Risk: Internal Ratings Based Approach (CRR) Part. Such a situation can also take place if separate exposures to the same obligor are assigned to different obligor grades in accordance with second sentence of Article 172(1)(e) of the Credit Risk: Internal Ratings Based Approach (CRR) Part in other exposure classes.</p> <p>(ii) of which number of obligors that defaulted during the year preceding the disclosure date (column d):</p>

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	<p>this is a subset of column C and represents the number of obligors which defaulted during the year. Defaults shall be determined in accordance with Article 178 of the Credit Risk: Internal Ratings Based Approach (CRR) Part. Each defaulted obligor shall be counted only once in the numerator and denominator of the one-year default rate calculation, even if the obligor defaulted more than once during the relevant one-year period.</p>
e	<p>Observed average default rate:</p> <p>Arithmetic average of one-year default rates as defined to in Article 4(1)(78) CRR, observed within the available dataset.</p> <p>When calculating one-year default rates institutions shall ensure both of the following:</p> <p>(a) that the denominator consists of the number of non-defaulted obligors with any credit obligation observed at the beginning of the one-year observation period (beginning of the previous disclosure period, i.e. beginning of the year prior to the disclosure reference date); in this context a credit obligation refers to both of the following: (i) any on-balance sheet item, including any amount of principal, interest and fees; (ii) any off-balance sheet items, including guarantees issued by the institution as a guarantor.</p> <p>(b) that the numerator includes all those obligors considered in the denominator that had at least one default event during the one-year observation period (year prior to the disclosure reference date).</p> <p>Institutions shall choose an appropriate approach between an approach based on overlapping or one-year time windows and an approach based on non-overlapping one-year time windows, to calculate the observed average default rate.</p>
f	<p>Exposure weighted average PD (%):</p> <p>Exposure weighted average PD (%) as disclosed in column f of template UKB CR6.</p> <p>For all exposures included in each bucket of the fixed PD range, the average PD estimate of each obligor, weighted by the exposure value post-CCF and CRM as disclosed in column e of template UKB CR6. PD input floors in accordance with Articles 160(1) and 163(1) of the Credit Risk: Internal Ratings Based Approach (CRR) Part and exposure-level risk weight floors in accordance with Article 160(4), as referred to in Article 161(3), and Article 163(4), as referred to in Article 164(5) of the Credit Risk: Internal Ratings Based Approach (CRR) Part shall be taken into account.</p>
g	<p>Average PD at the disclosure date (%):</p> <p>Arithmetic average of PD at the beginning of the disclosure period of the obligors that fall within the bucket of the fixed PD range and counted in d (average weighted by the number of obligors). PD input floors shall be taken into</p>

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	account.
h	<p>Average historical annual default rate (%):</p> <p>The simple average of the annual default rate of the five most recent years (obligors at the beginning of each year that are defaulted during that year/total number of obligors at the beginning of the year). Alternatively, the institution may use a longer historical period that is consistent with the institution's actual risk management practices. If the institution uses a longer historical period they shall explain and clarify this in the accompanying narrative to the template.</p>

Template UKB CR9.1 – IRB approach– Back-testing of PD per exposure class (only for PD estimates in accordance with Article 180(1)(f) of the Credit Risk: Internal Ratings Based Approach (CRR) Part).

15 In addition to template UKB CR9, institutions shall disclose information included in template UKB CR9.1 where they apply Article 180(1)(f) of the Credit Risk: Internal Ratings Based Approach (CRR) Part for PD estimation and only for PD estimates in accordance with the same Article. Instructions are the same than for template UKB CR9, with the following exceptions:

- Under column b, institutions shall disclose the PD ranges in accordance with their internal grades that they map to the scale used by the external ECAI, instead of a fixed external PD range.
- Institutions shall disclose one column for each ECAI considered following Article 180(1)(f) of the Credit Risk: Internal Ratings Based Approach (CRR) Part. Institutions shall include in these columns the external rating to which their internal PD ranges are mapped.