

Directive 2006/48/EC of the European Parliament and of the council of 14 June 2006 relating to the taking up and pursuit of the business of credit institutions (recast) (Text with EEA relevance) (repealed)

ANNEX VIII

CREDIT RISK MITIGATION

PART 3

Calculating the effects of credit risk mitigation

1. Subject to Parts 4 to 6, where the provisions in Parts 1 and 2 are satisfied, the calculation of risk-weighted exposure amounts under Articles 78 to 83 and the calculation of risk-weighted exposure amounts and expected loss amounts under Articles 84 to 89 may be modified in accordance with the provisions of this Part.
2. Cash, securities or commodities purchased, borrowed or received under a repurchase transaction or securities or commodities lending or borrowing transaction shall be treated as collateral.
1. FUNDED CREDIT PROTECTION
 - 1.1. Credit linked notes
 3. Investments in credit linked notes issued by the lending credit institution may be treated as cash collateral.
 - 1.2. On-balance sheet netting
 4. Loans and deposits with the lending credit institution subject to on-balance sheet netting are to be treated as cash collateral.
 - 1.3. Master netting agreements covering repurchase transactions and/or securities or commodities lending or borrowing transactions and/or other capital market-driven transactions
 - 1.3.1. Calculation of the fully-adjusted exposure value
 - (a) Using the 'Supervisory' volatility adjustments or the 'Own Estimates' volatility adjustments approaches
5. Subject to points 12 to 21, in calculating the 'fully adjusted exposure value' (E*) for the exposures subject to an eligible master netting agreement covering repurchase transactions and/or securities or commodities lending or borrowing transactions and/or other capital market-driven transactions, the volatility adjustments to be applied shall be calculated either using the Supervisory Volatility Adjustments Approach or the Own Estimates Volatility Adjustments Approach as set out in points 30 to 61 for the Financial Collateral Comprehensive Method. For the use of the Own estimates approach, the same conditions and requirements shall apply as apply under the Financial Collateral Comprehensive Method
6. The net position in each 'type of security' or commodity shall be calculated by subtracting from the total value of the securities or commodities of that type lent, sold or provided under the master netting agreement, the total value of securities or commodities of that type borrowed, purchased or received under the agreement.
7. For the purposes of point 6, 'type of security' means securities which are issued by the same entity, have the same issue date, the same maturity and are subject to the

Status: EU Directives are being published on this site to aid cross referencing from UK legislation. After IP completion day (31 December 2020 11pm) no further amendments will be applied to this version.

same terms and conditions and are subject to the same liquidation periods as indicated in points 34 to 59.

8. The net position in each currency, other than the settlement currency of the master netting agreement, shall be calculated by subtracting from the total value of securities denominated in that currency lent, sold or provided under the master netting agreement added to the amount of cash in that currency lent or transferred under the agreement, the total value of securities denominated in that currency borrowed, purchased or received under the agreement added to the amount of cash in that currency borrowed or received under the agreement.
9. The volatility adjustment appropriate to a given type of security or cash position shall be applied to the absolute value of the positive or negative net position in the securities of that type.
10. The foreign exchange risk (fx) volatility adjustment shall be applied to the net positive or negative position in each currency other than the settlement currency of the master netting agreement.
11. E^* shall be calculated according to the following formula:

$$E^* = \max \{0, [(E) - (C)] + (\text{netpositie in elk effect} \times H_{\text{sec}}) + (E_{\text{fx}} \times H_{\text{fx}})\}$$

Where risk-weighted exposure amounts are calculated under Articles 78 to 83, E is the exposure value for each separate exposure under the agreement that would apply in the absence of the credit protection.

Where risk-weighted exposure amounts and expected loss amounts are calculated under Articles 84 to 89, E is the exposure value for each separate exposure under the agreement that would apply in the absence of the credit protection.

C is the value of the securities or commodities borrowed, purchased or received or the cash borrowed or received in respect of each such exposure.

S(E) is the sum of all Es under the agreement.

S(C) is the sum of all Cs under the agreement.

E_{fx} is the net position (positive or negative) in a given currency other than the settlement currency of the agreement as calculated under point 8.

H_{sec} is the volatility adjustment appropriate to a particular type of security.

H_{fx} is the foreign exchange volatility adjustment.

E^* is the fully adjusted exposure value.

(b) Using the Internal Models approach

12. As an alternative to using the Supervisory volatility adjustments approach or the Own Estimates volatility adjustments approach in calculating the fully adjusted exposure value (E^*) resulting from the application of an eligible master netting agreement covering repurchase transactions, securities or commodities lending or borrowing transactions, and/or other capital market driven transactions other than derivative transactions, credit institutions may be permitted to use an internal models approach which takes into account correlation effects between security positions subject to the master netting agreement as well as the liquidity of the instruments concerned. Internal models used in this approach shall provide estimates of the potential change in value

Status: EU Directives are being published on this site to aid cross referencing from UK legislation. After IP completion day (31 December 2020 11pm) no further amendments will be applied to this version.

of the unsecured exposure amount (E — C). Subject to the approval of the competent authorities, credit institutions may also use their internal models for margin lending transactions, if the transactions are covered under a bilateral master netting agreement that meets the requirements set out in Annex III, Part 7.

13. A credit institution may choose to use an internal models approach independently of the choice it has made between Articles 78 to 83 and Articles 84 to 89 for the calculation of risk-weighted exposure amounts. However, if a credit institution seeks to use an internal models approach, it must do so for all counterparties and securities, excluding immaterial portfolios where it may use the Supervisory volatility adjustments approach or the Own estimates volatility adjustments approach as set out in points 5 to 11.
14. The internal models approach is available to credit institutions that have received recognition for an internal risk-management model under Annex V to Directive 2006/49/EC.
15. Credit institutions which have not received supervisory recognition for use of such a model under Directive 2006/49/EC, may apply to the competent authorities for recognition of an internal risk-measurement model for the purposes of points 12 to 21.
16. Recognition shall only be given if the competent authority is satisfied that the credit institution's risk-management system for managing the risks arising on the transactions covered by the master netting agreement is conceptually sound and implemented with integrity and that, in particular, the following qualitative standards are met:
 - (a) the internal risk-measurement model used for calculation of potential price volatility for the transactions is closely integrated into the daily risk-management process of the credit institution and serves as the basis for reporting risk exposures to senior management of the credit institution;
 - (b) the credit institution has a risk control unit that is independent from business trading units and reports directly to senior management. The unit must be responsible for designing and implementing the credit institution's risk-management system. It shall produce and analyse daily reports on the output of the risk-measurement model and on the appropriate measures to be taken in terms of position limits;
 - (c) the daily reports produced by the risk-control unit are reviewed by a level of management with sufficient authority to enforce reductions of positions taken and of overall risk exposure;
 - (d) the credit institution has sufficient staff skilled in the use of sophisticated models in the risk control unit;
 - (e) the credit institution has established procedures for monitoring and ensuring compliance with a documented set of internal policies and controls concerning the overall operation of the risk-measurement system;
 - (f) the credit institution's models have a proven track record of reasonable accuracy in measuring risks demonstrated through the back-testing of its output using at least one year of data;
 - (g) the credit institution frequently conducts a rigorous programme of stress testing and the results of these tests are reviewed by senior management and reflected in the policies and limits it sets;

Status: EU Directives are being published on this site to aid cross referencing from UK legislation. After IP completion day (31 December 2020 11pm) no further amendments will be applied to this version.

- (h) the credit institution must conduct, as Part of its regular internal auditing process, an independent review of its risk-measurement system. This review must include both the activities of the business trading units and of the independent risk-control unit;
 - (i) at least once a year, the credit institution must conduct a review of its risk-management system; and
 - (j) the internal model shall meet the requirements set out in Annex III, Part 6, points 40 to 42.
17. The calculation of the potential change in value shall be subject to the following minimum standards:
- (a) at least daily calculation of the potential change in value;
 - (b) a 99th percentile, one-tailed confidence interval;
 - (c) a 5-day equivalent liquidation period, except in the case of transactions other than securities repurchase transactions or securities lending or borrowing transactions where a 10-day equivalent liquidation period shall be used;
 - (d) an effective historical observation period of at least one year except where a shorter observation period is justified by a significant upsurge in price volatility; and
 - (e) three-monthly data set updates.
18. The competent authorities shall require that the internal risk-measurement model captures a sufficient number of risk factors in order to capture all material price risks.
19. The competent authorities may allow credit institutions to use empirical correlations within risk categories and across risk categories if they are satisfied that the credit institution's system for measuring correlations is sound and implemented with integrity.
20. The fully adjusted exposure value (E*) for credit institutions using the Internal models approach shall be calculated according to the following formula:

$$E^* = \max \{0, [(E - C) + (\text{uitkomst van het interne model})]\}$$

Where risk-weighted exposure amounts are calculated under Articles 78 to 83, E is the exposure value for each separate exposure under the agreement that would apply in the absence of the credit protection.

Where risk-weighted exposure amounts and expected loss amounts are calculated under Articles 84 to 89, E is the exposure value for each separate exposure under the agreement that would apply in the absence of the credit protection.

C is the value of the securities borrowed, purchased or received or the cash borrowed or received in respect of each such exposure.

(E) is the sum of all Es under the agreement.

(C) is the sum of all Cs under the agreement.

21. In calculating risk-weighted exposure amounts using internal models, credit institutions shall use the previous business day's model output.

1.3.2. Calculating risk-weighted exposure amounts and expected loss amounts for repurchase transactions and/or securities or commodities lending or borrowing

Status: EU Directives are being published on this site to aid cross referencing from UK legislation. After IP completion day (31 December 2020 11pm) no further amendments will be applied to this version.

transactions and/or other capital market-driven transactions covered by master netting agreements

Standardised Approach

22. E* as calculated under points 5 to 21 shall be taken as the exposure value of the exposure to the counterparty arising from the transactions subject to the master netting agreement for the purposes of Article 80.

IRB Approach

23. E* as calculated under points 5 to 21 shall be taken as the exposure value of the exposure to the counterparty arising from the transactions subject to the master netting agreement for the purposes of Annex VII.

1.4. Financial collateral

1.4.1. Financial Collateral Simple Method

- [^{F1}24. The Financial Collateral Simple Method shall be available only where risk-weighted exposure amounts are calculated under Articles 78 to 83. A credit institution shall not use both the Financial Collateral Simple Method and the Financial Collateral Comprehensive Method, unless for the purposes of Articles 85(1) and 89(1). Credit institutions shall demonstrate to the competent authorities that this exceptional application of both methods is not used selectively with the purpose of achieving reduced minimum capital requirements and does not lead to regulatory arbitrage.]

Valuation

Textual Amendments

- F1** Substituted by [Commission Directive 2009/83/EC of 27 July 2009 amending certain Annexes to Directive 2006/48/EC of the European Parliament and of the Council as regards technical provisions concerning risk management \(Text with EEA relevance\).](#)

25. Under this method, recognised financial collateral is assigned a value equal to its market value as determined in accordance with Part 2, point 6.

Calculating risk-weighted exposure amounts

- [^{F1}26. The risk weight that would be assigned under Articles 78 to 83 if the lender had a direct exposure to the collateral instrument shall be assigned to those portions of exposure values collateralised by the market value of recognised collateral. For this purpose, the exposure value of an off-balance sheet item listed in Annex II shall be 100 % of its value rather than the exposure value indicated in Article 78(1). The risk weight of the collateralised portion shall be a minimum of 20 % except as specified in points 27 to 29. The remainder of the exposure value shall receive the risk weight that would be assigned to an unsecured exposure to the counterparty under Articles 78 to 83.]

Repurchase transactions and securities lending or borrowing transactions

27. A risk weight of 0 % shall be assigned to the collateralised portion of the exposure arising from transactions which fulfil the criteria enumerated in points 58 and 59. If the counterparty to the transaction is not a core market participant a risk weight of 10 % shall be assigned.

OTC derivative transactions subject to daily mark-to-market

28. A risk weight of 0 % shall, to the extent of the collateralisation, be assigned to the exposure values determined under Annex III for the derivative instruments listed in Annex IV and subject to daily marking-to-market, collateralised by cash or cash-assimilated instruments where there is no currency mismatch. A risk weight of 10 % shall be assigned to the extent of the collateralisation to the exposure values of such transactions collateralised by debt securities issued by central governments or central banks which are assigned a 0 % risk weight under Articles 78 to 83.

For the purposes of this point debt securities issued by central governments or central banks shall include: –

- (a) debt securities issued by regional governments or local authorities exposures to which are treated as exposures to the central government in whose jurisdiction they are established under Articles 78 to 83;
- (b) debt securities issued by multilateral development banks to which a 0 % risk weight is assigned under or by virtue of Articles 78 to 83; and
- (c) debt securities issued by international organisations which are assigned a 0 % risk weight under Articles 78 to 83.

Other transactions

29. A 0 % risk weight may be assigned where the exposure and the collateral are denominated in the same currency, and either:
- (a) the collateral is cash on deposit or a cash assimilated instrument; or
 - (b) the collateral is in the form of debt securities issued by central governments or central banks eligible for a 0 % risk weight under Articles 78 to 83, and its market value has been discounted by 20 %.

For the purposes of this point ‘debt securities issued by central governments or central banks’ shall to include those indicated under point 28.

1.4.2. Financial Collateral Comprehensive Method

30. In valuing financial collateral for the purposes of the Financial Collateral Comprehensive Method, ‘volatility adjustments’ shall be applied to the market value of collateral, as set out in points 34 to 59 below, in order to take account of price volatility.
31. Subject to the treatment for currency mismatches in the case of OTC derivatives transactions set out in point 32, where collateral is denominated in a currency that differs from that in which the underlying exposure is denominated, an adjustment reflecting currency volatility shall be added to the volatility adjustment appropriate to the collateral as set out in points 34 to 59.
32. In the case of OTC derivatives transactions covered by netting agreements recognised by the competent authorities under Annex III, a volatility adjustment reflecting currency volatility shall be applied when there is a mismatch between the collateral currency and the settlement currency. Even in the case where multiple currencies are involved in the transactions covered by the netting agreement, only a single volatility adjustment shall be applied.
- (a) Calculating adjusted values

Status: EU Directives are being published on this site to aid cross referencing from UK legislation. After IP completion day (31 December 2020 11pm) no further amendments will be applied to this version.

33. The volatility-adjusted value of the collateral to be taken into account is calculated as follows in the case of all transactions except those transactions subject to recognised master netting agreements to which the provisions set out in points 5 to 23 are applied:

$$C_{VA} = C \times (1 - H_C - H_{FX})$$

The volatility-adjusted value of the exposure to be taken into account is calculated as follows:

$$E_{VA} = E \times (1 + H_E), \text{ and, in the case of OTC derivative transactions, } E_{VA} = E.$$

The fully adjusted value of the exposure, taking into account both volatility and the risk-mitigating effects of collateral is calculated as follows:

$$E^* = \max \{0, [E_{VA} - C_{VAM}]\}$$

Where:

[^{F1}E is the exposure value as would be determined under Articles 78 to 83 or Articles 84 to 89 as appropriate if the exposure was not collateralised. For this purpose, for credit institutions calculating risk-weighted exposure amounts under Articles 78 to 83, the exposure value of an off-balance sheet item listed in Annex II shall be 100 % of its value rather than the exposure value indicated in Article 78(1), and for credit institutions calculating risk-weighted exposure amounts under Articles 84 to 89, the exposure value of the items listed in Annex VII, Part 3, points 9 to 11 shall be calculated using a conversion factor of 100 % rather than the conversion factors or percentages indicated in those points.]

E_{VA} is the volatility-adjusted exposure amount.

C_{VA} is the volatility-adjusted value of the collateral.

C_{VAM} is C_{VA} further adjusted for any maturity mismatch in accordance with the provisions of Part 4.

H_E is the volatility adjustment appropriate to the exposure (E), as calculated under points 34 to 59.

H_C is the volatility adjustment appropriate to the collateral, as calculated under points 34 to 59.

H_{FX} is the volatility adjustment appropriate to currency mismatch, as calculated under points 34 to 59.

E^* is the fully adjusted exposure value taking into account volatility and the risk-mitigating effects of the collateral.

- (b) Calculation of volatility adjustments to be applied

34. Volatility adjustments may be calculated in two ways: the Supervisory volatility adjustments approach and the Own estimates of volatility adjustments approach (the 'Own estimates' approach).

35. A credit institution may choose to use the Supervisory volatility adjustments approach or the Own estimates approach independently of the choice it has made between the Articles 78 to 83 and Articles 84 to 89 for the calculation of risk-weighted exposure amounts. However, if credit institutions seek to use the Own estimates approach, they must do so for the full range of instrument types, excluding immaterial portfolios where they may use the Supervisory volatility adjustments approach.

Status: EU Directives are being published on this site to aid cross referencing from UK legislation. After IP completion day (31 December 2020 11pm) no further amendments will be applied to this version.

Where the collateral consists of a number of recognised items, the volatility adjustment shall be $H_i = \alpha_i H_i$

, where α_i is the proportion of an item to the collateral as a whole and H_i is the volatility adjustment applicable to that item.

(i) Supervisory volatility adjustments

36. The volatility adjustments to be applied under the Supervisory volatility adjustments approach (assuming daily revaluation) shall be those set out in Tables 1 to 4.

VOLATILITY ADJUSTMENTS

TABLE 1

Credit quality step with which the credit assessment of the debt security is associated	Residual Maturity	Volatility adjustments for debt securities issued by entities described in Part 1, point 7(b)			Volatility adjustments for debt securities issued by entities described in Part 1, point 7(c) and (d)		
		20-day liquidation period (%)	10-day liquidation period (%)	5-day liquidation period (%)	20-day liquidation period (%)	10-day liquidation period (%)	5-day liquidation period (%)
1	≤ 1 year	0,707	0,5	0,354	1,414	1	0,707
	>1 ≤ 5 years	2,828	2	1,414	5,657	4	2,828
	> 5 years	5,657	4	2,828	11,314	8	5,657
2-3	≤ 1 year	1,414	1	0,707	2,828	2	1,414
	>1 ≤ 5 years	4,243	3	2,121	8,485	6	4,243
	> 5 years	8,485	6	4,243	16,971	12	8,485
4	≤ 1 year	21,213	15	10,607	N/A	N/A	N/A
	>1 ≤ 5 years	21,213	15	10,607	N/A	N/A	N/A
	> 5 years	21,213	15	10,607	N/A	N/A	N/A

TABLE 2

Credit quality step with	Volatility adjustments for debt securities issued by entities	Volatility adjustments for debt securities issued by entities described in Part 1, point 7(c)
--------------------------	---------------------------------------------------------------	-----------------------------------------------------------------------------------------------

Status: EU Directives are being published on this site to aid cross referencing from UK legislation. After IP completion day (31 December 2020 11pm) no further amendments will be applied to this version.

which the credit assessment of a short term debt security is associated	described in Part 1, point 7(b) with short-term credit assessments			and (d) with short-term credit assessments		
	20-day liquidation period (%)	10-day liquidation period (%)	5-day liquidation period (%)	20-day liquidation period (%)	10-day liquidation period (%)	5-day liquidation period (%)
1	0,707	0,5	0,354	1,414	1	0,707
2-3	1,414	1	0,707	2,828	2	1,414

TABLE 3

Other collateral or exposure types			
	20-day liquidation period (%)	10-day liquidation period (%)	5-day liquidation period (%)
Main Index Equities, Main Index Convertible Bonds	21,213	15	10,607
Other Equities or Convertible Bonds listed on a recognised exchange	35,355	25	17,678
Cash	0	0	0
Gold	21,213	15	10,607

TABLE 4

Volatility adjustment for currency mismatch		
20-day liquidation period (%)	10-day liquidation period (%)	5-day liquidation period)
11,314	8	5,657

37. For secured lending transactions the liquidation period shall be 20 business days. For repurchase transactions (except insofar as such transactions involve the transfer of commodities or guaranteed rights relating to title to commodities) and securities lending or borrowing transactions the liquidation period shall be 5 business days. For other capital market driven transactions, the liquidation period shall be 10 business days.
38. In Tables 1 to 4 and in points 39 to 41, the credit quality step with which a credit assessment of the debt security is associated is the credit quality step with which the credit assessment is determined by the competent authorities to be associated under Articles 78 to 83. For the purpose of this point, Part 1, point 10 also applies.

39. For non-eligible securities or for commodities lent or sold under repurchase transactions or securities or commodities lending or borrowing transactions, the volatility adjustment is the same as for non-main index equities listed on a recognised exchange.
40. For eligible units in collective investment undertakings the volatility adjustment is the weighted average volatility adjustments that would apply, having regard to the liquidation period of the transaction as specified in point 37, to the assets in which the fund has invested. If the assets in which the fund has invested are not known to the credit institution, the volatility adjustment is the highest volatility adjustment that would apply to any of the assets in which the fund has the right to invest.
41. For unrated debt securities issued by institutions and satisfying the eligibility criteria in Part 1, point 8 the volatility adjustments shall be the same as for securities issued by institutions or corporates with an external credit assessment associated with credit quality steps 2 or 3.
- (ii) Own estimates of volatility adjustments
42. The competent authorities shall permit credit institutions complying with the requirements set out in points 47 to 56 to use their own volatility estimates for calculating the volatility adjustments to be applied to collateral and exposures.
43. When debt securities have a credit assessment from a recognised ECAI equivalent to investment grade or better, the competent authorities may allow credit institutions to calculate a volatility estimate for each category of security.
44. In determining relevant categories, credit institutions shall take into account the type of issuer of the security the external credit assessment of the securities, their residual maturity, and their modified duration. Volatility estimates must be representative of the securities included in the category by the credit institution.
45. For debt securities having a credit assessment from a recognised ECAI equivalent to below investment grade, and for other eligible collateral, the volatility adjustments must be calculated for each individual item.
46. Credit institutions using the Own estimates approach must estimate volatility of the collateral or foreign exchange mismatch without taking into account any correlations between the unsecured exposure, collateral and/or exchange rates.

Quantitative Criteria

47. In calculating the volatility adjustments, a 99th percentile one-tailed confidence interval shall be used.
48. The liquidation period shall be 20 business days for secured lending transactions; 5 business days for repurchase transactions, except insofar as such transactions involve the transfer of commodities or guaranteed rights relating to title to commodities and securities lending or borrowing transactions, and 10 business days for other capital market driven transactions.
49. Credit institutions may use volatility adjustment numbers calculated according to shorter or longer liquidation periods, scaled up or down to the liquidation period set out in point 48 for the type of transaction in question, using the square root of time formula:

$$H_M = H_N \sqrt{T_M / T_N}$$

Status: EU Directives are being published on this site to aid cross referencing from UK legislation. After IP completion day (31 December 2020 11pm) no further amendments will be applied to this version.

where T_M is the relevant liquidation period;

H_M is the volatility adjustment under T_M and

H_N is the volatility adjustment based on the liquidation period T_N .

50. Credit institutions shall take into account the illiquidity of lower-quality assets. The liquidation period shall be adjusted upwards in cases where there is doubt concerning the liquidity of the collateral. They shall also identify where historical data may understate potential volatility, e.g., a pegged currency. Such cases shall be dealt with by means of a stress scenario.
51. The historical observation period (sample period) for calculating volatility adjustments shall be a minimum length of one year. For credit institutions that use a weighting scheme or other methods for the historical observation period, the effective observation period shall be at least one year (that is, the weighted average time lag of the individual observations shall not be less than 6 months). The competent authorities may also require a credit institution to calculate its volatility adjustments using a shorter observation period if, in the competent authorities' judgement, this is justified by a significant upsurge in price volatility.
52. Credit institutions shall update their data sets at least once every three months and shall also reassess them whenever market prices are subject to material changes. This implies that volatility adjustments shall be computed at least every three months.

Qualitative Criteria

53. The volatility estimates shall be used in the day-to-day risk management process of the credit institution including in relation to its internal exposure limits.
54. If the liquidation period used by the credit institution in its day-to-day risk management process is longer than that set out in this Part for the type of transaction in question, the credit institution's volatility adjustments shall be scaled up in accordance with the square root of time formula set out in point 49.
55. The credit institution shall have established procedures for monitoring and ensuring compliance with a documented set of policies and controls for the operation of its system for the estimation of volatility adjustments and for the integration of such estimations into its risk management process.
56. An independent review of the credit institution's system for the estimation of volatility adjustments shall be carried out regularly in the credit institution's own internal auditing process. A review of the overall system for the estimation of volatility adjustments and for integration of those adjustments into the credit institution's risk management process shall take place at least once a year and shall specifically address, at a minimum:
 - (a) the integration of estimated volatility adjustments into daily risk management;
 - (b) the validation of any significant change in the process for the estimation of volatility adjustments;
 - (c) the verification of the consistency, timeliness and reliability of data sources used to run the system for the estimation of volatility adjustments, including the independence of such data sources; and
 - (d) the accuracy and appropriateness of the volatility assumptions.

(iii) Scaling up of volatility adjustments

57. The volatility adjustments set out in points 36 to 41 are the volatility adjustments to be applied where there is daily revaluation. Similarly, where a credit institution uses its own estimates of the volatility adjustments in accordance with points 42 to 56, these must be calculated in the first instance on the basis of daily revaluation. If the frequency of revaluation is less than daily, larger volatility adjustments shall be applied. These shall be calculated by scaling up the daily revaluation volatility adjustments, using the following ‘square root of time’ formula:

$$H = H_M \sqrt{\frac{N_R + (T_M - 1)}{T_M}}$$

where:

H is the volatility adjustment to be applied

H_M is the volatility adjustment where there is daily revaluation

N_R is the actual number of business days between revaluations

T_M is the liquidation period for the type of transaction in question.

(iv) Conditions for applying a 0 % volatility adjustment

58. In relation to repurchase transactions and securities lending or borrowing transactions, where a credit institution uses the Supervisory Volatility Adjustments Approach or the Own Estimates Approach and where the conditions set out in points (a) to (h) are satisfied, credit institutions may, instead of applying the volatility adjustments calculated under points 34 to 57, apply a 0 % volatility adjustment. This option is not available in respect of credit institutions using the internal models approach set out in points 12 to 21:

- (a) Both the exposure and the collateral are cash or debt securities issued by central governments or central banks within the meaning of Part 1, point 7(b) and eligible for a 0 % risk weight under Articles 78 to 83,
- (b) Both the exposure and the collateral are denominated in the same currency,
- (c) Either the maturity of the transaction is no more than one day or both the exposure and the collateral are subject to daily marking-to-market or daily remargining,
- (d) It is considered that the time between the last marking-to-market before a failure to remargin by the counterparty and the liquidation of the collateral shall be no more than four business days,
- (e) The transaction is settled across a settlement system proven for that type of transaction,
- (f) The documentation covering the agreement is standard market documentation for repurchase transactions or securities lending or borrowing transactions in the securities concerned,
- (g) The transaction is governed by documentation specifying that if the counterparty fails to satisfy an obligation to deliver cash or securities or to deliver margin or otherwise defaults, then the transaction is immediately terminable, and
- (h) The counterparty is considered a ‘core market participant’ by the competent authorities. Core market participants shall include the following entities:

Status: EU Directives are being published on this site to aid cross referencing from UK legislation. After IP completion day (31 December 2020 11pm) no further amendments will be applied to this version.

- the entities mentioned in point 7(b) of Part 1 exposures to which are assigned a 0 % risk weight under Articles 78 to 83;
 - institutions;
 - other financial companies (including insurance companies) exposures to which are assigned a 20 % risk weight under Articles 78 to 83 or which, in the case of credit institutions calculating risk-weighted exposure amounts and expected loss amounts under Articles 83 to 89, do not have a credit assessment by a recognised ECAI and are internally rated as having a PD equivalent to that associated with the credit assessments of ECAIs determined by the competent authorities to be associated with credit quality step 2 or above under the rules for the risk weighting of exposures to corporates under Articles 78 to 83
 - regulated collective investment undertakings that are subject to capital or leverage requirements;
 - regulated pension funds; and
 - recognised clearing organisations.
59. Where a competent authority permits the treatment set out in point 58 to be applied in the case of repurchase transactions or securities lending or borrowing transactions in securities issued by its domestic government, then other competent authorities may choose to allow credit institutions incorporated in their jurisdiction to adopt the same approach to the same transactions.

(c) Calculating risk-weighted exposure amounts and expected loss amounts

Standardised Approach

60. E^* as calculated under point 33 shall be taken as the exposure value for the purposes of Article 80. In the case of off-balance sheet items listed in Annex II, E^* shall be taken as the value at which the percentages indicated in Article 78(1) shall be applied to arrive at the exposure value.

IRB Approach

61. LGD^* (the effective LGD) calculated as set out in this point shall be taken as the LGD for the purposes of Annex VII.

$$LGD^* = LGD \times (E^*/E)$$

where:

LGD is the LGD that would apply to the exposure under Articles 84 to 89 if the exposure was not collateralised;

E is the exposure value as described under point 33;

E^* is as calculated under point 33.

1.5. Other eligible collateral for Articles 84 to 89

1.5.1. Valuation

(a) Real estate collateral

62. The property shall be valued by an independent valuer at or less than the market value. In those Member States that have laid down rigorous criteria for the assessment of the

Status: EU Directives are being published on this site to aid cross referencing from UK legislation. After IP completion day (31 December 2020 11pm) no further amendments will be applied to this version.

mortgage lending value in statutory or regulatory provisions the property may instead be valued by an independent valuer at or less than the mortgage lending value.

63. 'Market value' means the estimated amount for which the property should exchange on the date of valuation between a willing buyer and a willing seller in an arm's-length transaction after proper marketing wherein the parties had each acted knowledgeably, prudently and without compulsion. The market value shall be documented in a transparent and clear manner.
64. 'Mortgage lending value' means the value of the property as determined by a prudent assessment of the future marketability of the property taking into account long-term sustainable aspects of the property, the normal and local market conditions, the current use and alternative appropriate uses of the property. Speculative elements shall not be taken into account in the assessment of the mortgage lending value. The mortgage lending value shall be documented in a transparent and clear manner.
65. The value of the collateral shall be the market value or mortgage lending value reduced as appropriate to reflect the results of the monitoring required under Part 2, point 8 and to take account of the any prior claims on the property.
- (b) Receivables
66. The value of receivables shall be the amount receivable.
- (c) Other physical collateral
67. The property shall be valued at its market value — that is the estimated amount for which the property would exchange on the date of valuation between a willing buyer and a willing seller in an arm's-length transaction.
- 1.5.2. Calculating risk-weighted exposure amounts and expected loss amounts
- (a) General treatment
68. LGD* calculated as set out in points 69 to 72 shall be taken as the LGD for the purposes of Annex VII.
69. Where the ratio of the value of the collateral (C) to the exposure value (E) is below a threshold level of C* (the required minimum collateralisation level for the exposure) as laid down in Table 5, LGD* shall be the LGD laid down in Annex VII for uncollateralised exposures to the counterparty.^{F2} For this purpose, the exposure value of the items listed in Annex VII, Part 3, points 9, 10 and 11 shall be calculated using a conversion factor or percentage of 100 % rather than the conversion factors or percentages indicated in those points.]

Textual Amendments

F2 Inserted by [Commission Directive 2009/83/EC of 27 July 2009 amending certain Annexes to Directive 2006/48/EC of the European Parliament and of the Council as regards technical provisions concerning risk management \(Text with EEA relevance\)](#).

70. Where the ratio of the value of the collateral to the exposure value exceeds a second, higher threshold level of C** (i.e. the required level of collateralisation to receive full LGD recognition) as laid down in Table 5, LGD* shall be that prescribed in Table 5.

Status: EU Directives are being published on this site to aid cross referencing from UK legislation. After IP completion day (31 December 2020 11pm) no further amendments will be applied to this version.

71. Where the required level of collateralisation C^{**} is not achieved in respect of the exposure as a whole, the exposure shall be considered to be two exposures — that part in respect of which the required level of collateralisation C^{**} is achieved and the remainder.
72. Table 5 sets out the applicable LGD* and required collateralisation levels for the secured parts of exposures.

TABLE 5

Minimum LGD for secured parts of exposures

	LGD* for senior claims or contingent claims	LGD* for subordinated claims or contingent claims	Required minimum collateralisation level of the exposure (C^*)	Required minimum collateralisation level of the exposure (C^{**})
Receivables	35 %	65 %	0 %	125 %
Residential real estate/ commercial real estate	35 %	65 %	30 %	140 %
Other collateral	40 %	70 %	30 %	140 %

By way of derogation, until 31 December 2012 the competent authorities may, subject to the levels of collateralisation indicated in Table 5:

- (a) allow credit institutions to assign a 30 % LGD for senior exposures in the form of Commercial Real Estate leasing;
- (b) allow credit institutions to assign a 35 % LGD for senior exposures in the form of equipment leasing; and
- (c) allow credit institutions to assign a 30 % LGD for senior exposures secured by residential or commercial real estate.

At the end of this period, this derogation shall be reviewed.

- (b) Alternative treatment for real estate collateral
73. Subject to the requirements of this point and point 74 and as an alternative to the treatment in points 68 to 72, the competent authorities of a Member State may authorise credit institutions to assign a 50 % risk weight to the Part of the exposure fully collateralised by residential real estate property or commercial real estate property situated within the territory of the Member State if they have evidence that the relevant markets are well-developed and long-established with loss-rates from lending collateralised by residential real estate property or commercial real estate property respectively that do not exceed the following limits:
- (a) losses stemming from lending collateralised by residential real estate property or commercial real estate property respectively up to 50 % of the market value (or where applicable and if lower 60 % of the mortgage-lending-value) do not exceed 0,3 % of

- the outstanding loans collateralised by that form of real estate property in any given year; and
- (b) overall losses stemming from lending collateralised by residential real estate property or commercial real estate property respectively do not exceed 0,5 % of the outstanding loans collateralised by that form of real estate property in any given year.
74. If either of the conditions in point 73 is not satisfied in a given year, the eligibility to use this treatment shall cease until the conditions are satisfied in a subsequent year.
- [^{F1}75. Where the discretion provided for in point 73 is exercised by the competent authorities of a Member State, the competent authorities of another Member State may authorise their credit institutions to assign the risk weights permitted under the treatment of point 73 in respect of exposures collateralised by residential real estate property or commercial real estate property located in the territory of the former Member State subject to the same conditions as apply in the former Member State.]
- 1.6. Calculating risk-weighted exposure amounts and expected loss amounts in the case of mixed pools of collateral
76. Where risk-weighted exposure amounts and expected loss amounts are calculated under Articles 84 to 89, and an exposure is collateralised by both financial collateral and other eligible collateral, LGD*, to be taken as the LGD for the purposes of Annex VII, shall be calculated as follows.
77. The credit institution shall be required to subdivide the volatility-adjusted value of the exposure (i.e. the value after the application of the volatility adjustment as set out in point 33) into parts each covered by only one type of collateral. That is, the credit institution must divide the exposure into the part covered by eligible financial collateral, the portion covered by receivables, the portions covered by commercial real estate property collateral and/or residential real estate property collateral, the part covered by other eligible collateral, and the unsecured portion, as relevant.
78. LGD* for each part of exposure shall be calculated separately in accordance with the relevant provisions of this Annex.
- 1.7. Other funded credit protection
- 1.7.1. Deposits with third party institutions
79. Where the conditions set out in Part 2, point 12 are satisfied, credit protection falling within the terms of Part 1, point 23 may be treated as a guarantee by the third party institution.
- 1.7.2. Life insurance policies pledged to the lending credit institution
- [^{F1}80. Where the conditions set out in Part 2, point 13 are satisfied, the portion of the exposure collateralised by the current surrender value of credit protection falling within the terms of Part 1, point 24 shall be either of the following:
- (a) subject to the risk weights specified in point 80a where the exposure is subject to Articles 78 to 83;
- (b) assigned an LGD of 40 % where the exposure is subject to Articles 84 to 89 but not subject to the credit institution's own estimates of LGD.

Status: EU Directives are being published on this site to aid cross referencing from UK legislation. After IP completion day (31 December 2020 11pm) no further amendments will be applied to this version.

In case of a currency mismatch, the current surrender value shall be reduced according to point 84, the value of the credit protection being the current surrender value of the life insurance policy.]

[^{F2}80a. For purposes of point 80(a), the following risk weights shall be assigned on the basis of the risk weight assigned to a senior unsecured exposure to the company providing the life insurance:

- (a) a risk weight of 20 %, where the senior unsecured exposure to the company providing the life insurance is assigned a risk weight of 20 %;
- (b) a risk weight of 35 %, where the senior unsecured exposure to the company providing the life insurance is assigned a risk weight of 50 %;
- (c) a risk weight of 70 %, where the senior unsecured exposure to the company providing the life insurance is assigned a risk weight of 100 %;
- (d) a risk weight of 150 %, where the senior unsecured exposure to the company providing the life insurance is assigned a risk weight of 150 %.]

1.7.3. Institution instruments repurchased on request

81. Instruments eligible under Part 1, point 25 may be treated as a guarantee by the issuing institution.

82. The value of the credit protection recognised shall be the following:

- (a) where the instrument will be repurchased at its face value, the value of the protection shall be that amount;
- (b) where the instrument will be repurchased at market price, the value of the protection shall be the value of the instrument valued in the same way as the debt securities specified in Part 1, point 8.

2. UNFUNDED CREDIT PROTECTION

2.1. Valuation

83. The value of unfunded credit protection (G) shall be the amount that the protection provider has undertaken to pay in the event of the default or non-payment of the borrower or on the occurrence of other specified credit events. In the case of credit derivatives which do not include as a credit event restructuring of the underlying obligation involving forgiveness or postponement of principal, interest or fees that result in a credit loss event (e.g. value adjustment, the making of a value adjustment or other similar debit to the profit and loss account),

- (a) where the amount that the protection provider has undertaken to pay is not higher than the exposure value, the value of the credit protection calculated under the first sentence of this point shall be reduced by 40 %; or
- (b) where the amount that the protection provider has undertaken to pay is higher than the exposure value, the value of the credit protection shall be no higher than 60 % of the exposure value.

84. Where unfunded credit protection is denominated in a currency different from that in which the exposure is denominated (a currency mismatch) the value of the credit protection shall be reduced by the application of a volatility adjustment H_{FX} as follows:

$$G^* = G \times (1 - H_{FX})$$

where:

G is the nominal amount of the credit protection,

G* is G adjusted for any foreign exchange risk, and

H_{FX} is the volatility adjustment for any currency mismatch between the credit protection and the underlying obligation.

Where there is no currency mismatch

$$G^* = G$$

85. The volatility adjustments for any currency mismatch may be calculated based on the Supervisory volatility adjustments approach or the Own estimates approach as set out in points 34 to 57.

2.2. Calculating risk-weighted exposure amounts and expected loss amounts

2.2.1. Partial protection — tranching

86. Where the credit institution transfers a part of the risk of a loan in one or more tranches, the rules set out in Articles 94 to 101 shall apply. Materiality thresholds on payments below which no payment shall be made in the event of loss are considered to be equivalent to retained first loss positions and to give rise to a tranching transfer of risk.

2.2.2. Standardised Approach

(a) Full protection

[^F187. For the purposes of Article 80, g shall be the risk weight to be assigned to an exposure, the exposure value (E) of which is fully protected by unfunded protection (G_A), where: E is the exposure value according to Article 78; for this purpose, the exposure value of an off-balance sheet item listed in Annex II shall be 100 % of its value rather than the exposure value indicated in Article 78(1); g is the risk weight of exposures to the protection provider as specified under Articles 78 to 83; and G_A is the value of G* as calculated under point 84 further adjusted for any maturity mismatch as laid down in Part 4.]

(b) Partial protection — equal seniority

88. Where the protected amount is less than the exposure value and the protected and unprotected parts are of equal seniority — i.e. the credit institution and the protection provider share losses on a pro-rata basis, proportional regulatory capital relief shall be afforded. For the purposes of Article 80, risk-weighted exposure amounts shall be calculated in accordance with the following formula:

$$(E - G_A) \times r + G_A \times g$$

where:

[^F1E is the exposure value according to Article 78. For this purpose, the exposure value of an off-balance sheet item listed in Annex II shall be 100 % of its value rather than the exposure value indicated in Article 78(1);]

Status: EU Directives are being published on this site to aid cross referencing from UK legislation. After IP completion day (31 December 2020 11pm) no further amendments will be applied to this version.

G_A is the value of G^* as calculated under point 84 further adjusted for any maturity mismatch as laid down in Part 4;

r is the risk weight of exposures to the obligor as specified under Articles 78 to 83; and

g is the risk weight of exposures to the protection provider as specified under Articles 78 to 83.

(c) Sovereign guarantees

89. The competent authorities may extend the treatment provided for in Annex VI, Part 1, points 4 and 5 to exposures or parts of exposures guaranteed by the central government or central bank, where the guarantee is denominated in the domestic currency of the borrower and the exposure is funded in that currency.

2.2.3. IRB Approach

Full protection/Partial protection — equal seniority

[^{F190} For the covered portion of the exposure value (E) (based on the adjusted value of the credit protection G_A), the PD for the purposes of Annex VII, Part 2 may be the PD of the protection provider, or a PD between that of the borrower and that of the guarantor if a full substitution is deemed not to be warranted. In the case of subordinated exposures and non-subordinated unfunded protection, the LGD to be applied for the purposes of Annex VII, Part 2 may be that associated with senior claims.

91. For any uncovered portion of the exposure value (E) the PD shall be that of the borrower and the LGD shall be that of the underlying exposure.

92. G_A is the value of G^* as calculated under point 84 further adjusted for any maturity mismatch as laid down in Part 4. E is the exposure value according to Annex VII, Part 3. For this purpose, the exposure value of the items listed in Annex VII, Part 3, points 9 to 11 shall be calculated using a conversion factor or percentage of 100 % rather than the conversion factors or percentages indicated in those points.]