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►**B** **DIRECTIVE 98/31/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL**

of 22 June 1998

amending Council Directive 93/6/EEC on the capital adequacy of investment firms and credit institutions

(OJ L 204, 21.7.1998, p. 13)

Corrected by:

►**C1** Corrigendum, OJ L 248, 8.9.1998, p. 20 (98/31/EC)

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DIRECTIVE 98/31/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

of 22 June 1998

amending Council Directive 93/6/EEC on the capital adequacy of investment firms and credit institutions

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular the first and third sentences of Article 57(2) thereof,

Having regard to the proposal from the Commission [1],

Having regard to the opinion of the Economic and Social Committee [2],

Having regard to the opinion of the European Monetary Institute [3],

Acting in accordance with the procedure laid down in Article 189b of the Treaty [4],

(1) Whereas the risks associated with commodities trading and commodity derivatives are currently subject to Council Directive 89/647/EEC of 18 December 1989 on a solvency ratio for credit institutions [5]; whereas, however, the market risks associated with those positions are not captured accurately by Directive 89/647/EEC; whereas it is necessary to extend the concept of the 'trading book' to positions in commodities or commodity derivatives which are held for trading purposes and are subject mainly to market risks; whereas institutions must comply with this Directive as regards the coverage of commodity risks on their overall business; whereas the perpetration of serious fraud by certain commodity futures traders is of growing concern to the Community and a threat to the image and integrity of the futures trading business; whereas it is desirable that the Commission should consider defining an appropriate prudential framework in order to prevent these fraudulent practices in the future;

(2) Whereas Council Directive 93/6/EEC of 15 March 1993 on the capital adequacy of investment firms and credit institutions [6] lays down a standardised method for the calculation of capital requirements for market risks incurred by investment firms and credit institutions; whereas institutions have developed their own risk-management systems (internal models), designed to measure more accurately than the standardised method the market risks incurred by investment firms and credit institutions; whereas the use of more accurate methods of measuring risks should be encouraged;

(3) Whereas the use of such internal models for the purpose of calculating capital requirements requires strict internal control mechanisms and should be subject to recognition and supervision by the competent authorities; whereas the continued reliability of the results of the internal model calculation should be verified by a back-testing procedure;

(4) Whereas it is appropriate that competent authorities may allow margin requirements for exchange-traded futures and options, and

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(1) OJ C 240, 6.8.1997, p. 24, and OJ C 118, 17.4.1998, p. 16.
(2) OJ C 19, 21.1.1998, p. 9.
(3) Opinion delivered on 7 October 1997.
(4) Opinion of the European Parliament of 18 December 1997 (OJ C 14, 19.1.1998), Council common position of 9 March 1998 (OJ C 135, 30.4.1998, p. 7) and Decision of the European Parliament of 30 April 1998 (OJ C 152, 18.5.1998). Council Decision of 19 May 1998.
(5) OJ L 386, 30.12.1989, p. 14. Directive as last amended by Directive 98/32/EC of the European Parliament and of the Council (see page 26 of this Official Journal).
(6) OJ L 141, 11.6.1993, p. 1. Directive as amended by Directive 98/33/EC of the European Parliament and of the Council (see page 29 of this Official Journal).

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on a transitional basis for cleared over-the-counter derivatives of the same nature, to be used as substitutes for the capital requirement calculated for such instruments in accordance with this Directive, provided that this does not lead to a capital requirement which is lower than the capital requirement calculated according to the other methods prescribed in this Directive; whereas the application of this principle does not require that the equivalence between such margin requirements and the capital requirements calculated according to the other methods prescribed in this Directive must be continually verified by the institutions applying this principle;

(5) Whereas the rules adopted at the wider international level may, in order to encourage more sophisticated risk-management methods based on internal models, lower capital requirements for credit institutions from third countries; whereas those credit institutions compete with investment firms and credit institutions incorporated in the Member States; whereas for investment firms and credit institutions incorporated in the Member States, only an amendment of Directive 93/6/EEC can provide similar incentives for the development and use of internal models;

(6) Whereas for the purpose of calculating market-risk-capital requirements, positions in gold and gold derivatives should be treated in a similar fashion to foreign-exchange positions;

(7) Whereas the issue of subordinated debt should not automatically exclude an issuer's equity from being included in a portfolio qualifying for a 2 % specific-risk weighting according to point 33 of Annex I to Directive 93/6/EEC;

(8) Whereas this Directive is in accordance with the work of an international forum of banking supervisors on the supervisory treatment of market risk and of positions in commodities and commodity derivatives;

(9) Whereas it is necessary to have a transitional capital regime on an optional basis for investment firms and credit institutions undertaking significant commodities business, having a diversified commodity portfolio and being not yet able to use models for the purpose of calculating the commodities risk capital requirement, in order to ensure a harmonious application of this Directive;

(10) Whereas this Directive is the most appropriate means of attaining the objectives sought and does not go beyond what is necessary to achieve those objectives,

HAVE ADOPTED THIS DIRECTIVE:

Article 1

93/6/EEC is hereby amended as follows:

1. Article 2 is amended as follows:

(a) point 6(a) and the introductory phrase and subpoints (i) and (ii) of point 6(b) shall be replaced by the following:

‘(a) its proprietary positions in financial instruments, commodities and commodity derivatives which are held for resale and/or which are taken on by the institution with the intention of benefiting in the short term from actual and/or expected differences between their buying and selling prices, or from other price or interest-rate variations, and positions in financial instruments, commodities and commodity derivatives, arising from matched principal broking, or positions taken in order to hedge other elements of the trading book;

(b) the exposures due to the unsettled transactions, free deliveries and over-the-counter (OTC) derivative instruments referred to in paragraphs 1, 2, 3 and 5 of Annex II, the

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exposures due to repurchase agreements and securities and commodities lending which are based on securities or commodities included in the trading book as defined in (a) referred to in paragraph 4 of Annex II, those exposures due to reverse repurchase agreements and securities-borrowing and commodities-borrowing transactions described in the same paragraph, provided the competent authorities so approve, which meet either conditions (i), (ii), (iii) and (v) or conditions (iv) and (v) as follows:

(i) the exposures are marked to market daily following the procedures laid down in Annex II;

(ii) the collateral is adjusted in order to take account of material changes in the value of the securities or commodities involved in the agreement or transaction in question, according to a rule acceptable to the competent authorities';

(b) points 15 and 16 shall be replaced by the following:

'15. "warrant" shall mean a security which gives the holder the right to purchase an underlying at a stipulated price until or at the warrant's expiry date. It may be settled by the delivery of the underlying itself or by cash settlement.

16. "stock financing" shall means positions where physical stock has been sold forward and the cost of funding has been locked in until the date of the forward sale';

(c) point 17, first paragraph, shall be replaced by the following:

'17. "repurchase agreement" and "reverse repurchase agreement" shall mean any agreement in which an institution or its counter-party transfers securities or commodities or guaranteed rights relating to title to securities or commodities where that guarantee is issued by a recognised exchange which holds the rights to the securities or commodities and the agreement does not allow an institution to transfer or pledge a particular security or commodity to more than one counter-party at one time, subject to a commitment to repurchase them (or substituted securities or commodities of the same description) at a specified price on a future date specified, or to be specified, by the transferor, being a repurchase agreement for the institution selling the securities or commodities and a reverse repurchase agreement for the institution buying them';

(d) point 18 shall be replaced by the following:

'18. "securities or commodities lending" and "securities or commodities borrowing" shall mean any transaction in which an institution or its counter-party transfers securities or commodities against appropriate collateral subject to a commitment that the borrower will return equivalent securities or commodities at some future date or when requested to do so by the transferor, that transaction being securities or commodities lending for the institution transferring the securities or commodities and being securities or commodities borrowing for the institution to which they are transferred.

Securities or commodities borrowing shall be considered an interprofessional transaction when the counter-party is subject to prudential coordination at Community level or is a Zone A credit institution as defined in Directive 89/647/EEC or is a recognised third-country investment firm or when the transaction is concluded with a recognised clearing house or exchange';

2. in Article 4(1), first subparagraph, points (i) and (ii) shall be replaced by the following:

'(i) the capital requirements, calculated in accordance with Annexes I, II and VI and, as appropriate, Annex VIII, for their trading-book business;

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(ii) the capital requirements, calculated in accordance with Annexes III and VII and, as appropriate, Annex VIII, for all of their business activities'.

3. Article 5(2) shall be replaced by the following:

'2. Notwithstanding paragraph 1, those institutions which calculate the capital requirements for their trading-book business in accordance with Annexes I and II, and as appropriate Annex VIII, shall monitor and control their large exposures in accordance with Directive 92/121/EEC subject to the modifications laid down in Annex VI to this Directive';

4. Article 7(10) and the introductory part of Article 7(11), shall be replaced by the following:

'10. Where the rights of waiver provided for in paragraphs 7 and 9 are not exercised, the competent authorities may, for the purpose of calculating the capital requirements set out in Annexes I and VIII and the exposures to clients set out in Annex VI on a consolidated basis, permit positions in the trading book of one institution to offset positions in the trading book of another institution according to the rules set out in Annexes I, VI and VIII.

In addition, they may allow foreign-exchange positions in one institution to offset foreign-exchange positions in another institution in accordance with the rules set out in Annex III and/or Annex VIII. They may also allow commodities positions in one institution to offset commodities positions in another institution in accordance with the rules set out in Annex VII and/or Annex VIII.

11. The competent authorities may also permit offsetting of the trading book and of the foreign-exchange and commodities positions, respectively, of undertakings located in third countries, subject to the simultaneous fulfilment of the following conditions:'.

5. Article 8(5) shall be replaced by the following:

'5. The competent authorities shall oblige institutions to report to them immediately any case in which their counter-parties in repurchase and reverse repurchase agreements or securities and commodities-lending and securities and commodities-borrowing transactions default on their obligations. The Commission shall report to the Council on such cases and their implications for the treatment of such agreements and transactions in this Directive not more than three years after the date referred to in Article 12. Such report shall also describe the way that institutions meet those of conditions (i) to (v) in Article 2(6)(b) that apply to them, in particular condition (v). Furthermore it shall give details of any changes in the relative volume of institutions' traditional lending and their lending through reverse repurchase agreements and securities-borrowing or commodities-borrowing transactions. If the Commission concludes on the basis of this report and other information that further safeguards are needed to prevent abuse, it shall make appropriate proposals'.

6. The following Article shall be inserted:

'Article 11a

Until 31 December 2006, Member States may authorise their institutions to use the minimum spread, carry and outright rates set out in the following table instead of those indicated in paragraphs 13, 14, 17 and 18 of Annex VII provided that the institutions, in the opinion of their competent authorities:

(i) undertake significant commodities business,

(ii) have a diversified commodities portfolio, and

(iii) are not yet in a position to use internal models for the purpose of calculating the capital requirement on commodities risk in accordance with Annex VIII.

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Table

	Precious metals (except gold)	Base metals	Agricultural products (softs)	Other, including energy products
Spread rate (%)	1,0	1,2	1,5	1,5
Carry rate (%)	0,3	0,5	0,6	0,6
Outright rate (%)	8	10	12	15

Member States shall inform the Commission of the use they make of this Article'.

7. Annexes I, II, III and V shall be amended, and Annexes VII and VIII added in accordance with the Annex to this Directive.

Article 2

1. Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive not later than 24 months after the date of its entry into force. They shall forthwith inform the Commission thereof.

When Member States adopt these measures, they shall contain a reference to this Directive or shall be accompanied by such reference on the occasion of their official publication. The methods of making such reference shall be laid down by Member States.

2. Member States shall communicate to the Commission the text of the main provisions of domestic law which they adopt in the field governed by this Directive.

Article 3

This Directive shall enter into force on the day of its publication in the *Official Journal of the European Communities*.

Article 4

This Directive is addressed to the Member States.

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ANNEX

1. Annex I is amended as follows:

   (a) In Paragraph 4, the last sentence is deleted and the following subparagraph is added:

   'The competent authorities may allow the capital requirement for an exchange-traded future to be equal to the margin required by the exchange if they are fully satisfied that it provides an accurate measure of the risk associated with the future and that it is at least equal to the capital requirement for a future that would result from a calculation made using the method set out in the remainder of this Annex or applying the internal models method described in Annex VIII. Until 31 December 2006 the competent authorities may also allow the capital requirement for an OTC derivatives contract of the type referred to in this paragraph cleared by a clearing house recognised by them to be equal to the margin required by the clearing house if they are fully satisfied that it provides an accurate measure of the risk associated with the derivatives contract and that it is at least equal to the capital requirement for the contract in question that would result from a calculation made using the method set out in the remainder of this Annex or applying the internal models method described in Annex VIII'.

   (b) In paragraph 5, the third subparagraph is replaced by the following:

   'The competent authorities shall require that the other risks, apart from the delta risk, associated with options are safeguarded against. The competent authorities may allow the requirement against a written exchange-traded option to be equal to the margin required by the exchange if they are fully satisfied that it provides an accurate measure of the risk associated with the option and that it is at least equal to the capital requirement against an option that would result from a calculation made using the method set out in the remainder of this Annex or applying the internal models method described in Annex VIII. Until 31 December 2006 the competent authorities may also allow the capital requirement for an OTC option cleared by a clearing house recognised by them to be equal to the margin required by the clearing house if they are fully satisfied that it provides an accurate measure of the risk associated with the option and that it is at least equal to the capital requirement for an OTC option that would result from a calculation made using the method set out in the remainder of this Annex or applying the internal models method described in Annex VIII. In addition they may allow the requirement on a bought exchange-traded or OTC option to be the same as that for the instrument underlying it, subject to the constraint that the resulting requirement does not exceed the market value of the option. The requirement against a written OTC option shall be set in relation to the instrument underlying it'.

   (c) Paragraph 6 is replaced by the following:

   '6. Warrants relating to debt instruments and equities shall be treated in the same way as options under paragraph 5'.

   (d) Paragraph 33(i) is replaced by the following:

   '(i) the equities shall not be those of issuers which have issued only traded debt instruments that currently attract an 8 % requirement in Table 1 appearing in paragraph 14 or that attract a lower requirement only because they are guaranteed or secured'.

2. Annex II is amended as follows:

   (a) Paragraph 1 is replaced by the following:

   '1. In the case of transactions in which debt instruments, equities and commodities (excluding repurchase and reverse repurchase agreements and securities or commodities lending and securities or commodities borrowing) are unsettled after their due delivery dates, an institution must calculate the price difference to which it is exposed. This is the difference between the agreed settlement price for the debt instrument, equity or commodity in question and its current market value, where the difference could involve a loss for the institution. It must multiply this difference by the appropriate factor in column A of the table appearing in paragraph 2 in order to calculate its capital requirement'.

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(b) Paragraphs 3.1 and. 3.2 are replaced by the following:

'3.1. An institution shall be required to hold capital against counterparty risk if:

(i) it has paid for securities or commodities before receiving them or it has delivered securities or commodities before receiving payment for them;

and

(ii) in the case of cross-border transactions, one day or more has elapsed since it made that payment or delivery.

3.2. The capital requirement shall be 8 % of the value of the securities or commodities or cash owed to the institution multiplied by the risk weighting applicable to the relevant counterparty'.

(c) The heading before paragraph 4.1 and the first subparagraph of paragraph 4.1 are replaced by the following:

'Repurchase and reverse repurchase agreements, securities or commodities lending and borrowing

4.1. In the case of repurchase agreements and securities or commodities lending based on securities or commodities included in the trading book the institution shall calculate the difference between the market value of the securities or commodities and the amount borrowed by the institution or the market value of the collateral, where that difference is positive. In the case of reverse repurchase agreements and securities or commodities borrowing, the institution shall calculate the difference between the amount the institution has lent or the market value of the collateral and the market value of the securities or commodities it has received, where that difference is positive'.

3. Annex III is amended as follows:

(a) Paragraph 1 is replaced by the following:

'1. If the sum of an institution's overall net foreign-exchange position and its net gold position, calculated in accordance with the procedure set out below, exceeds 2 % of its total own funds, it shall multiply the sum of its net foreign-exchange position and its net gold position by 8 % in order to calculate its own-funds requirement against foreign-exchange risk.

Until 31 December 2004, the competent authorities may allow institutions to calculate their own-funds requirement by multiplying by 8 % the amount by which the sum of the overall net foreign-exchange position and the net gold position exceeds 2 % of the total own funds.'.

(b) Paragraphs 3.1 and 3.2 are replaced by the following:

'3.1. Firstly, the institution's net open position in each currency (including the reporting currency) and in gold shall be calculated. This position shall consist of the sum of the following elements (positive or negative):

— the net spot position (i. e. all asset items less all liability items, including accrued interest, in the currency in question or, for gold, the net spot position in gold),

— the net forward position (i. e. all amounts to be received less all amounts to be paid under forward exchange and gold transactions, including currency and gold futures and the principal on currency swaps not included in the spot position),

— irrevocable guarantees (and similar instruments) that are certain to be called and likely to be irrecoverable,

— net future income/expenses not yet accrued but already fully hedged (at the discretion of the reporting institution and with the prior consent of the competent authorities, net future income/expenses not yet entered in accounting records but already fully hedged by forward foreign-exchange transactions may be included here). Such discretion must be exercised on a consistent basis,

— the net delta (or delta-based) equivalent of the total book of foreign-currency and gold options,

— the market value of other (i. e. non-foreign-currency and non-gold) options,

— any positions which an institution has deliberately taken in order to hedge against the adverse effect of the exchange rate on its

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capital ratio may be excluded from the calculation of net open currency positions. Such positions should be of a non-trading or structural nature and their exclusion, and any variation of the terms of their exclusion, shall require the consent of the competent authorities. The same treatment subject to the same conditions as above may be applied to positions which an institution has which relate to items that are already deducted in the calculation of own funds.

3.2. The competent authorities shall have the discretion to allow institutions to use the net present value when calculating the net open position in each currency and in gold.'.

(c) Paragraph 4, first sentence, is replaced by the following:

'4. Secondly, net short and long positions in each currency other than the reporting currency and the net long or short position in gold shall be converted at spot rates into the reporting currency'.

(d) Paragraph 7 is replaced by the following:

'7. Secondly, until 31 December 2004, the competent authorities may allow institutions to apply an alternative method to those outlined in paragraphs 1 to 6 for the purposes of this Annex. The capital requirement produced by this method must be sufficient to exceed 2 % of the net open position as measured in paragraph 4 and, on the basis of an analysis of exchange-rate movements during all the rolling 10-working-day periods over the preceding three years, to exceed the likely loss 99 % or more of the time.

The alternative method described in the first subparagraph may only be used under the following conditions:

(i) the calculation formula and the correlation coefficients are set by the competent authorities, based on their analysis of exchange-rate movements;

(ii) the competent authorities review the correlation coefficients regularly in the light of developments in foreign-exchange markets.'.

4. Annex V is amended as follows:

(a) Paragraph 2, first sentence, is replaced by the following: 'Notwithstanding paragraph 1, the competent authorities may permit those institutions which are obliged to meet the own-funds requirements laid down in Annexes I, II, III, IV, VI, VII and VIII to use an alternative definition when meeting those requirements only'.

(b) Paragraph 4 is replaced by the following:

'4. The subordinated loan capital referred to in paragraph 2(c) may not exceed a maximum of 150 % of the original own funds left to meet the requirements laid down in Annexes I, II, III, IV, VI, VII, and VIII and may approach that maximum only in particular circumstances acceptable to the relevant authorities'.

(c) Paragraphs 6 and 7 are replaced by the following:

'6. The competent authorities may permit investment firms to exceed the ceiling for subordinated loan capital prescribed in paragraph 4 if they judge it prudentially adequate and provided that the total of such subordinated loan capital and the items referred to in paragraph 5 does not exceed 200 % of the original own funds left to meet the requirements imposed in Annexes I, II, III, IV, VI, VII and VIII or 250 % of the same amount where investment firms deduct item 2(d) referred to in paragraph 2 when calculating own funds.

7. The competent authorities may permit the ceiling for subordinated loan capital prescribed in paragraph 4 to be exceeded by a credit institution if they judge it prudentially adequate and provided that the total of such subordinated loan capital and the items referred to in paragraph 5 does not exceed 250 % of the original own funds left to meet the requirements imposed in Annexes I, II, III, VI, VII and VIII'.

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5. The following Annexes are added:

'ANNEX VII

COMMODITIES RISK

1. Each position in commodities or commodity derivatives shall be expressed in terms of the standard unit of measurement. The spot price in each commodity shall be expressed in the reporting currency.

2. Positions in gold or gold derivatives shall be considered as being subject to foreign-exchange risk and treated according to Annex III or Annex VIII, as appropriate, for the purpose of calculating market risk.

3. For the purposes of this Annex, positions which are purely stock financing may be excluded from the commodities risk calculation only.

4. The interest-rate and foreign-exchange risks not covered by other provisions of this Annex shall be included in the calculation of general risk for traded debt instruments and in the calculation of foreign-exchange risk.

5. When the short position falls due before the long position, institutions shall also guard against the risk of a shortage of liquidity which may exist in some markets.

6. For the purpose of paragraph 19, the excess of an institution's long (short) positions over its short (long) positions in the same commodity and identical commodity futures, options and warrants shall be its net position in each commodity. The competent authorities shall allow positions in derivative instruments to be treated, as laid down in paragraphs 8, 9 and 10, as positions in the underlying commodity.

7. The competent authorities may regard the following positions as positions in the same commodity:

   — positions in different sub-categories of commodities in cases where the sub-categories are deliverable against each other,

   and

   — positions in similar commodities if they are close substitutes and if a minimum correlation of 0,9 between price movements can be clearly established over a minimum period of one year.

Particular instruments

8. Commodity futures and forward commitments to buy or sell individual commodities shall be incorporated in the measurement system as notional amounts in terms of the standard unit of measurement and assigned a maturity with reference to expiry date. The competent authorities may allow the capital requirement for an exchange-traded future to be equal to the margin required by the exchange if they are fully satisfied that it provides an accurate measure of the risk associated with the future and that it is at least equal to the capital requirement for a future that would result from a calculation made using the method set out in the remainder of this Annex or applying the internal models method described in Annex VIII. Until 31 December 2006 the competent authorities may also allow the capital requirement for an OTC commodity derivatives contract of the type referred to in this paragraph cleared by a clearing house recognised by them to be equal to the margin required by the clearing house if they are fully satisfied that it provides an accurate measure of the risk associated with the derivatives contract and that it is at least equal to the capital requirement for the contract in question that would result from a calculation made using the method set out in the remainder of this Annex or applying the internal models method described in Annex VIII.

9. Commodity swaps where one side of the transaction is a fixed price and the other the current market price shall be incorporated into the maturity ladder approach as a series of positions equal to the notional amount of the contract, with one position corresponding with each payment on the swap and slotted into the maturity ladder set out in the table appearing in paragraph 13. The positions would be long positions if the institution is paying a fixed price and receiving a floating price and short positions if the institution is receiving a fixed price and paying a floating price.

   Commodity swaps where the sides of the transaction are in different commodities are to be reported in the relevant reporting ladder for the maturity ladder approach.

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10. Options on commodities or on commodity derivatives shall be treated as if they were positions equal in value to the amount of the underlying to which the option refers, multiplied by its delta for the purposes of this Annex. The latter positions may be netted off against any offsetting positions in the identical underlying commodity or commodity derivative. The delta used shall be that of the exchange concerned, that calculated by the competent authorities or, where none of those is available or for OTC options, that calculated by the institution itself, subject to the competent authorities being satisfied that the model used by the institution is reasonable.

    However, the competent authorities may also prescribe that institutions calculate their deltas using a methodology specified by the competent authorities.

    The competent authorities shall require that the other risks, apart from the delta risk, associated with commodity options are safeguarded against. The competent authorities may allow the requirement for a written exchange-traded commodity option to be equal to the margin required by the exchange if they are fully satisfied that it provides an accurate measure of the risk associated with the option and that it is at least equal to the capital requirement against an option that would result from a calculation made using the method set out in the remainder of this Annex or applying the internal models method described in Annex VIII. Until 31 December 2006 the competent authorities may also allow the capital requirement for an OTC commodity option cleared by a clearing house recognised by them to be equal to the margin required by the clearing house if they are fully satisfied that it provides an accurate measure of the risk associated with the option and that it is at least equal to the capital requirement for an OTC option that would result from a calculation made using the method set out in the remainder of this Annex or applying the internal models method described in Annex VIII. In addition they may allow the requirement on a bought exchange-traded or OTC commodity option to be the same as that for the commodity underlying it, subject to the constraint that the resulting requirement does not exceed the market value of the option. The requirement for a written OTC option shall be set in relation to the commodity underlying it.

11. Warrants relating to commodities shall be treated in the same way as commodity options under paragraph 10.

12. The transferor of commodities or guaranteed rights relating to title to commodities in a repurchase agreement and the lender of commodities in a commodities lending agreement shall include such commodities in the calculation of its capital requirement under this Annex.

(a) *Maturity ladder approach*

13. The institution shall use a separate maturity ladder in line with the following table for each commodity. All positions in that commodity and all positions which are regarded as positions in the same commodity pursuant to paragraph 7 shall be assigned to the appropriate maturity bands. Physical stocks shall be assigned to the first maturity band.

Maurity band (1)	Spread rate (in %) (2)
0 ≤ 1 month	1,50
> 1 ≤ 3 months	1,50
> 3 ≤ 6 months	1,50
> 6 ≤ 12 months	1,50
> 1 ≤ 2 years	1,50
> 2 ≤ 3 years	1,50
> 3 years	1,50

14. Competent authorities may allow positions which are, or are regarded pursuant to paragraph 7 as, positions in the same commodity to be offset and assigned to the appropriate maturity bands on a net basis for:

    — positions in contracts maturing on the same date,

    and

    — positions in contracts maturing within 10 days of each other if the contracts are traded on markets which have daily delivery dates.

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15. The institution shall then work out the sum of the long positions and the sum of the short positions in each maturity band. The amount of the former (latter) which are matched by the latter (former) in a given maturity band shall be the matched positions in that band, while the residual long or short position shall be the unmatched position for the same band.

16. That part of the unmatched long (short) position for a given maturity band that is matched by the unmatched short (long) position for a maturity band further out shall be the matched position between two maturity bands. That part of the unmatched long or unmatched short position that cannot be thus matched shall be the unmatched position.

17. The institution's capital requirement for each commodity shall be calculated on the basis of the relevant maturity ladder as the sum of the following:

    (i) the sum of the matched long and short positions, multiplied by the appropriate spread rate as indicated in the second column of the table appearing in paragraph 13 for each maturity band and by the spot price for the commodity;

    (ii) the matched position between two maturity bands for each maturity band into which an unmatched position is carried forward, multiplied by 0,6 % (carry rate) and by the spot price for the commodity;

    (iii) the residual unmatched positions, multiplied by 15 % (outright rate) and by the spot price for the commodity.

18. The institution's overall capital requirement for commodities risk shall be calculated as the sum of the capital requirements calculated for each commodity according to paragraph 17.

(b) *Simplified approach*

19. The institution's capital requirement for each commodity shall be calculated as the sum of:

    (i) 15 % of the net position, long or short, multiplied by the spot price for the commodity;

    (ii) 3 % of the gross position, long plus short, multiplied by the spot price for the commodity.

20. The institution's overall capital requirement for commodities risk shall be calculated as the sum of the capital requirements calculated for each commodity according to paragraph 19.

ANNEX VIII

INTERNAL MODELS

1. The competent authorities may, subject to the conditions laid down in this Annex, allow institutions to calculate their capital requirements for position risk, foreign-exchange risk and/or commodities risk using their own internal risk-management models instead of or in combination with the methods described in Annexes I, III and VII. Explicit recognition by the competent authorities of the use of models for supervisory capital purposes shall be required in each case.

2. Recognition shall only be given if the competent authority is satisfied that the institution's risk-management system is conceptually sound and implemented with integrity and that, in particular, the following qualitative standards are met:

    (i) the internal risk-measurement model is closely integrated into the daily risk-management process of the institution and serves as the basis for reporting risk exposures to senior management of the institution;

    (ii) the 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 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 trading limits;

    (iii) the institution's board of directors and senior management are actively involved in the risk-control process and the daily reports produced by the risk-control unit are reviewed by a level of management with sufficient authority to enforce both reductions of positions taken by individual traders as well as in the institution's overall risk exposure;

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(iv) the institution has sufficient numbers of staff skilled in the use of sophisticated models in the trading, risk-control, audit and back-office areas;

(v) the 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;

(vi) the institution's models have a proven track record of reasonable accuracy in measuring risks;

(vii) the institution frequently conduct 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;

(viii) the 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. At least once a year, the institution must conduct a review of its overall risk-management process. The review must consider:

— the adequacy of the documentation of the risk-management system and process and the organisation of the risk-control unit,

— the integration of market risk measures into daily risk management and the integrity of the management information system,

— the process the institution employs for approving risk-pricing models and valuation systems that are used by front and back-office personnel,

— the scope of market risks captured by the risk-measurement model and the validation of any significant changes in the risk-measurement process,

— the accuracy and completeness of position data, the accuracy and appropriateness of volatility and correlation assumptions, and the accuracy of valuation and risk sensitivity calculations,

— the verification process the institution employs to evaluate the consistency, timeliness and reliability of data sources used to run internal models, including the independence of such data sources,

and

— the verification process the institution uses to evaluate back-testing that is conducted to assess the model's accuracy.

3. The institution shall monitor the accuracy and performance of its model by conducting a back-testing programme. The back-testing has to provide for each business day a comparison of the one-day value-at-risk measure generated ►C1 by the institution's model for the portfolio's end-of-day positions to the one-day change of the portfolio's value ◄ by the end of the subsequent business day. Competent authorities shall examine the institution's capability to perform back-testing on both actual and hypothetical changes in the portfolio's value. Back-testing on hypothetical changes in the portfolio's value is based on a comparison between the portfolio's end-of-day value and, assuming unchanged positions, its value at the end of the subsequent day. Competent authorities shall require institutions to take appropriate measures to improve their back-testing programme if deemed deficient.

4. For the purpose of calculating capital requirements for specific risk associated with traded debt and equity positions, the competent authorities may recognise the use of an institution's internal model if in addition to compliance with the conditions in the remainder of this Annex the model:

— explains the historical price variation in the portfolio,

— captures concentration in terms of magnitude and changes of composition of the portfolio,

— is robust to an adverse environment,

— is validated through back-testing aimed at assessing whether specific risk is being accurately captured. If competent authorities allow this back-testing to be performed on the basis of relevant sub-portfolios, these must be chosen in a consistent manner.

5. Institutions using internal models which are not recognised in accordance with paragraph 4 shall be subject to a separate capital charge for specific risk as calculated according to Annex I.

6. For the purpose of paragraph 10(ii) the results of the institution's own calculation shall be scaled up by a multiplication factor of at least 3.

7. The multiplication factor shall be increased by a plus-factor of between 0 and 1 in accordance with the following table, depending on the number of

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overshootings for the most recent 250 business days as evidenced by the institution's back-testing. Competent authorities shall require the institutions to calculate overshootings consistently on the basis of back-testing either on actual or on hypothetical changes in the portfolio's value. An overshooting is a one-day change in the portfolio's value that exceeds the related one-day value-at-risk measure generated by the institution's model. For the purpose of determining the plus-factor the number of overshootings shall be assessed at least quarterly.

Number of overshootings	Plus-factor
Fewer than 5	0,00
5	0,40
6	0,50
7	0,65
8	0,75
9	0,85
10 or more	1,00

The competent authorities can, in individual cases and owing to an exceptional situation, waive the requirement to increase the multiplication factor by the plus-factor according to the above table, if the institution has demonstrated to the satisfaction of the competent authorities that such an increase is unjustified and that the model is basically sound.

If numerous overshootings indicate that the model is not sufficiently accurate, the competent authorities shall revoke the model's recognition or impose appropriate measures to ensure that the model is improved promptly.

In order to allow competent authorities to monitor the appropriateness of the plus-factor on an ongoing basis, institutions shall notify promptly, and in any case no later than within five working days, the competent authorities of overshootings that result form their back-testing programme and that would according to the above table imply an increase of a plus-factor.

8. If the institution's model is recognised by the competent authorities in accordance with paragraph 4 for the purpose of calculating capital requirements for specific risk, the institution shall increase its capital requirement calculated pursuant to paragraphs 6, 7 and 10 by a surcharge in the amount of either:

   (i) the specific risk portion of the value-at-risk measure which should be isolated according to supervisory guidelines; or, at the institution's option,

   (ii) the value-at-risk measures of sub-portfolios of debt and equity positions that contain specific risk.

   Institutions using option (ii) are required to identify their sub-portfolio structure beforehand and should not change it without the consent of the competent authorities.

9. The competent authorities may waive the requirement pursuant to paragraph 8 for a surcharge if the institution demonstrates that in line with agreed international standards its model accurately captures also the event risk and default risk for its traded debt and equity positions.

10. Each institution must meet a capital requirement expressed as the higher of:

   (i) its previous day's value-at-risk number measured according to the parameters specified in this Annex;

   (ii) an average of the daily value-at-risk measures on each of the preceding 60 business days, multiplied by the factor mentioned in paragraph 6, adjusted by the factor mentioned in paragraph 7.

11. The calculation of value-at-risk shall be subject to the following minimum standards:

   (i) at least daily calculation of value-at-risk;

   (ii) a 99th percentile, one-tailed confidence interval;

   (iii) a 10-day equivalent holding period;

   (iv) 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;

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(v) three-monthly data set updates.

12. The competent authorities shall require that the model captures accurately all the material price risks of options or option-like positions and that any other risks not captured by the model are covered adequately by own funds.

13. The competent authorities shall require that the risk-measurement model captures a sufficient number of risk factors, depending on the level of activity of the institution in the respective markets. As a minimum, the following provisions shall be respected:

(i) for interest rate risk, the risk-measurement system shall incorporate a set of risk factors corresponding to the interest rates in each currency in which the institution has interest rate sensitive on- or off-balance sheet positions. The institution shall model the yield curves using one of the generally accepted approaches. For material exposures to interest-rate risk in the major currencies and markets, the yield curve shall be divided into a minimum of six maturity segments, to capture the variations of volatility of rates along the yield curve. The risk-measurement system must also capture the risk of less than perfectly correlated movements between different yield curves;

(ii) for foreign-exchange risk, the risk-measurement system shall incorporate risk factors corresponding to gold and to the individual foreign currencies in which the institution's positions are denominated;

(iii) for equity risk, the risk-measurement system shall use a separate risk factor at least for each of the equity markets in which the institution holds significant positions;

(iv) for commodity risk, the risk-measurement system shall use a separate risk factor at least for each commodity in which the institution holds significant positions. The risk-measurement system must also capture the risk of less than perfectly correlated movements between similar, but not identical, commodities and the exposure to changes in forward prices arising from maturity mismatches. It shall also take account of market characteristics, notably delivery dates and the scope provided to traders to close out positions.

14. The competent authorities may allow institutions to use empirical correlations within risk categories and across risk categories if they are satisfied that the institution's system for measuring correlations is sound and implemented with integrity’.