Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms and amending Regulation (EU) No 648/2012 (Text with EEA relevance)

[X1PART THREE

CAPITAL REQUIREMENTS

TITLE IV

OWN FUNDS REQUIREMENTS FOR MARKET RISK

CHAPTER 5

Use of internal models to calculate own funds requirements

[X1 Section 2

General requirements

Article 365

VaR and stressed VaR Calculation

1 The calculation of the value-at-risk number referred to in Article 364 shall be subject to the following requirements:

- a daily calculation of the value-at-risk number;
- b a 99th percentile, one-tailed confidence interval;
- c a 10-day holding period;
- 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;
- e at least monthly data set updates.

The institution may use value-at-risk numbers calculated according to shorter holding periods than 10 days scaled up to 10 days by an appropriate methodology that is reviewed periodically.

2 In addition, the institution shall at least weekly calculate a ' stressed value-at-risk ' of the current portfolio, in accordance with the requirements set out in the first paragraph, with value-at-risk model inputs calibrated to historical data from a continuous 12-month period of significant financial stress relevant to the institution's portfolio. The choice of such historical data shall be subject to at least annual review by the institution, which shall notify the outcome to the competent authorities. F1...

Textual Amendments

F1 Words in Art. 365(2) omitted (31.12.2020) by virtue of The Capital Requirements (Amendment) (EU Exit) Regulations 2018 (S.I. 2018/1401), regs. 1(3), **165** (with savings in S.I. 2019/680, reg. 11); 2020 c. 1, Sch. 5 para. 1(1)

Article 366

Regulatory back testing and multiplication factors

1 The results of the calculations referred to in Article 365 shall be scaled up by the multiplication factors (m_c) and (m_s).

2 Each of the multiplication factors (m_c) and (m_s) shall be the sum of at least 3 and an addend between 0 and 1 in accordance with Table 1. That addend shall depend on the number of overshootings for the most recent 250 business days as evidenced by the institution's back-testing of the value-at-risk number as set out in Article 365(1).

TABLE 1

Number of overshootings	addend
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

3 The institutions shall count daily overshootings on the basis of back-testing on hypothetical and actual 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 number generated by the institution's model. For the purpose of determining the addend the number of overshootings shall be assessed at least quarterly and shall be equal to the higher of the number of overshootings under hypothetical and actual changes in the value of the portfolio.

Back-testing on hypothetical changes in the portfolio's value shall be 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.

Back-testing on actual changes in the portfolio's value shall be based on a comparison between the portfolio's end-of-day value and its actual value at the end of the subsequent day excluding fees, commissions, and net interest income.

4 The competent authorities may in individual cases limit the addend to that resulting from overshootings under hypothetical changes, where the number of overshootings under actual changes does not result from deficiencies in the internal model.

5 In order to allow competent authorities to monitor the appropriateness of the multiplication factors 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 from their back-testing programme.

Article 367

Requirements on risk measurement

1 Any internal model used to calculate capital requirements for position risk, foreign exchange risk, commodities risk and any internal model for correlation trading shall meet all of the following requirements:

- a the model shall capture accurately all material price risks;
- b the model shall capture a sufficient number of risk factors, depending on the level of activity of the institution in the respective markets. Where a risk factor is incorporated into the institution's pricing model but not into the risk-measurement model, the institution shall be able to justify such an omission to the satisfaction of the competent authority. The risk- measurement model shall capture nonlinearities for options and other products as well as correlation risk and basis risk. Where proxies for risk factors are used they shall show a good track record for the actual position held.

2 Any internal model used to calculate capital requirements for position risk, foreign exchange risk or commodities risk shall meet all of the following requirements:

- a the model 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 model shall also capture the risk of less than perfectly correlated movements between different yield curves;
- b the model shall incorporate risk factors corresponding to gold and to the individual foreign currencies in which the institution's positions are denominated. For CIUs the actual foreign exchange positions of the CIU shall be taken into account. Institutions may rely on third party reporting of the foreign exchange position of the CIU, where the correctness of that report is adequately ensured. If an institution is not aware of the foreign exchange positions of a CIU, this position shall be carved out and treated in accordance with Article 353(3);
- c the model shall use a separate risk factor at least for each of the equity markets in which the institution holds significant positions;
- d the model shall use a separate risk factor at least for each commodity in which the institution holds significant positions. The model shall 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;
- e the institution's internal model shall conservatively assess the risk arising from less liquid positions and positions with limited price transparency under realistic market scenarios. In addition, the internal model shall meet minimum data standards. Proxies shall be appropriately conservative and shall be used only where available data is insufficient or is not reflective of the true volatility of a position or portfolio.

3 Institutions may, in any internal model used for purposes of this Chapter, use empirical correlations within risk categories and across risk categories only if the institution's approach for measuring correlations is sound and implemented with integrity.

Article 368

Qualitative requirements

1 Any internal model used for purposes of this Chapter shall be conceptually sound and implemented with integrity and, in particular, all of the following qualitative requirements shall be met:

a any internal model used to calculate capital requirements for position risk, foreign exchange risk or commodities risk shall be closely integrated into the daily risk-management process of the institution and serve as the basis for reporting risk exposures to senior management;

b the institution shall have a risk control unit that is independent from business trading units and reports directly to senior management. The unit shall be responsible for designing and implementing any internal model used for purposes of this Chapter. The unit shall conduct the initial and on-going validation of any internal model used for purposes of this Chapter, being responsible for the overall risk management system. The unit shall produce and analyse daily reports on the output of any internal model used for calculating capital requirements for position risk, foreign exchange risk and commodities risk, and on the appropriate measures to be taken in terms of trading limits;

c the institution's management body and senior management shall be 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;

d the institution shall have sufficient numbers of staff skilled in the use of sophisticated internal models, and including those used for purposes of this Chapter, in the trading, risk-control, audit and back-office areas;

e the institution shall have established procedures for monitoring and ensuring compliance with a documented set of internal policies and controls concerning the overall operation of its internal models, and including those used for purposes of this Chapter;

f any internal model used for purposes of this Chapter shall have a proven track record of reasonable accuracy in measuring risks;

g the institution shall frequently conduct a rigorous programme of stress testing, including reverse stress tests, which encompasses any internal model used for purposes of this Chapter and the results of these stress tests shall be reviewed by senior management and reflected in the policies and limits it sets. This process shall particularly address illiquidity of markets in stressed market conditions, concentration risk, one way markets, event and jump-to-default risks, non-linearity of products, deep out-of-the-money positions, positions subject to the gapping of prices and other risks that may not be captured appropriately in the internal models. The shocks applied shall reflect the nature of the portfolios and the time it could take to hedge out or manage risks under severe market conditions;

h the institution shall conduct, as part of its regular internal auditing process, an independent review of its internal models, and including those used for purposes of this Chapter.

2 The review referred to in point (h) of paragraph 1 shall include both the activities of the business trading units and of the independent risk-control unit. At least once a year, the institution shall conduct a review of its overall risk-management process. The review shall consider the following:

- a the adequacy of the documentation of the risk-management system and process and the organisation of the risk-control unit;
- b the integration of risk measures into daily risk management and the integrity of the management information system;
- c the process the institution employs for approving risk-pricing models and valuation systems that are used by front and back-office personnel;
- d the scope of risks captured by the risk-measurement model and the validation of any significant changes in the risk-measurement process;
- e 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;
- f 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;
- g the verification process the institution uses to evaluate back-testing that is conducted to assess the models' accuracy.

3 As techniques and best practices evolve, institutions shall apply those new techniques and practices in any internal model used for purposes of this Chapter.

Article 369

Internal Validation

1 Institutions shall have processes in place to ensure that all their internal models used for purposes of this Chapter have been adequately validated by suitably qualified parties independent of the development process to ensure that they are conceptually sound and adequately capture all material risks. The validation shall be conducted when the internal model is initially developed and when any significant changes are made to the internal model. The validation shall also be conducted on a periodic basis but especially where there have been any significant structural changes in the market or changes to the composition of the portfolio which might lead to the internal model no longer being adequate. As techniques and best practices for internal validation evolve, institutions shall apply these advances. Internal model validation shall not be limited to back-testing, but shall, at a minimum, also include the following:

- a tests to demonstrate that any assumptions made within the internal model are appropriate and do not underestimate or overestimate the risk;
- b in addition to the regulatory back-testing programmes, institutions shall carry out their own internal model validation tests, including back-testing, in relation to the risks and structures of their portfolios;
- c the use of hypothetical portfolios to ensure that the internal model is able to account for particular structural features that may arise, for example material basis risks and concentration risk.

2 The institution shall perform back-testing on both actual and hypothetical changes in the portfolio's value. **]**

Editorial Information

X1 Substituted by Corrigendum to Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms and amending Regulation (EU) No 648/2012 (OJ L 176, 27.6.2013, p. 1).

Changes to legislation:
Regulation (EU) No 575/2013 of the European Parliament and of the Council, Section 2 is up to date with all changes known to be in force on or before 23 June 2024. There are changes that may be brought into force at a future date. Changes that have been made appear in the content and are referenced with annotations.
View outstanding changes

Changes and effects yet to be applied to the whole legislation item and associated provisions

- Pt. 3 Title 1 Ch. 1 SECTION 2 A 95 repeal by EUR 2019/2033 Regulation (This amendment by the EU not applied to legislation.gov.uk because it is brought into force after IP completion day.)
- Pt. 3 Title 1 Ch. 1 SECTION 2 repeal by EUR 2019/2033 Regulation (This amendment by the EU not applied to legislation.gov.uk because it is brought into force after IP completion day.)
- Pt. 3 Title 1 Ch. 1 SECTION 2 A 98 repeal by EUR 2019/2033 Regulation (This amendment by the EU not applied to legislation.gov.uk because it is brought into force after IP completion day.)
- Pt. 3 Title 1 Ch. 1 SECTION 2 A 96 repeal by EUR 2019/2033 Regulation (This amendment by the EU not applied to legislation.gov.uk because it is brought into force after IP completion day.)
- Pt. 3 Title 1 Ch. 1 SECTION 2 A 97 repeal by EUR 2019/2033 Regulation (This amendment by the EU not applied to legislation.gov.uk because it is brought into force after IP completion day.)
- Art. 4.1(7) words omitted by S.I. 2018/1401 reg. 64(7)(b) (This amendment not applied to legislation.gov.uk. Reg. 64(7) omitted (6.9.2019) by virtue of S.I. 2019/1232, regs. 1(2), 3(3)(c)(i))
- Art. 4.1(7) words substituted by S.I. 2018/1401 reg. 64(7)(a) (This amendment not applied to legislation.gov.uk. Reg. 64(7) omitted (6.9.2019) by virtue of S.I. 2019/1232, regs. 1(2), 3(3)(c)(i))
- Art. 4.1(7) words substituted by S.I. 2018/1401 reg. 64(7)(c) (This amendment not applied to legislation.gov.uk. Reg. 64(7) omitted (6.9.2019) by virtue of S.I. 2019/1232, regs. 1(2), 3(3)(c)(i))
- Art. 4.1(13) words substituted by S.I. 2024/705 Sch. 2 para. 19(a)
- Art. 4.1(14) words substituted by S.I. 2024/705 Sch. 2 para. 19(b)
- Art. 4.1(14a) words substituted by S.I. 2024/705 Sch. 2 para. 19(c)
- Art. 4.1(26) words inserted by S.I. 2018/1401 reg. 64(20)(a) (This amendment not applied to legislation.gov.uk. Reg. 64(20) omitted (6.9.2019) by virtue of S.I. 2019/1232, regs. 1(2), 3(3)(c)(ii))
- Art. 4.1(26) words substituted by S.I. 2018/1401 reg. 64(20)(d) (This amendment not applied to legislation.gov.uk. Reg. 64(20) omitted (6.9.2019) by virtue of S.I. 2019/1232, regs. 1(2), 3(3)(c)(ii))
- Art. 4.1(28) words substituted by S.I. 2018/1401 reg. 64(23)(a) (This amendment not applied to legislation.gov.uk. Reg. 64(23) omitted (6.9.2019) by virtue of S.I. 2019/1232, regs. 1(2), 3(3)(c)(iii))
- Art. 4.1(28) words substituted by S.I. 2018/1401 reg. 64(23)(b) (This amendment not applied to legislation.gov.uk. Reg. 64(23) omitted (6.9.2019) by virtue of S.I. 2019/1232, regs. 1(2), 3(3)(c)(iii))
- Art. 4.1(28) words substituted by S.I. 2018/1401 reg. 64(23)(c) (This amendment not applied to legislation.gov.uk. Reg. 64(23) omitted (6.9.2019) by virtue of S.I. 2019/1232, regs. 1(2), 3(3)(c)(iii))
- Art. 4.1(61) words substituted by S.I. 2024/705 Sch. 2 para. 19(d)
- Art. 4.1(62) words substituted by S.I. 2024/705 Sch. 2 para. 19(e)
- Art. 4.1(63) words substituted by S.I. 2024/705 Sch. 2 para. 19(f)
- Art. 4.1(66) words substituted by S.I. 2024/705 Sch. 2 para. 19(g)
- Art. 4.1(67) words substituted by S.I. 2024/705 Sch. 2 para. 19(h)

- Art. 4.1(128) word substituted by S.I. 2018/1401 reg. 64(51) (This amendment not applied to legislation.gov.uk. Reg. 64(51) omitted (6.9.2019) by virtue of S.I. 2019/1232, regs. 1(2), 3(3)(c)(iv))
- Art. 4.1(129) words substituted by S.I. 2024/705 Sch. 2 para. 19(i)
- Art. 11(6)(a) words substituted by S.I. 2021/1078 reg. 4(5)(c) (This amendment not applied to legislation.gov.uk. Amending provision substituted by S.I. 2021/1376)
- Art. 18(8)(a) words substituted by S.I. 2020/1385 reg. 74(3)(c) (This amendment not applied to legisaltion.gov.uk. Art. 18(8) substituted (31.12.2020) by S.I. 2019/264, regs. 1, 5(3).)
- Art. 31(1)(b) words substituted by S.I. 2018/1401 reg. 86(a) (This amendment not applied to legislation.gov.uk. Reg. 86(a) omitted immediately before IP completion day by virtue of S.I. 2020/1470, reg. 1(4), Sch. 2 para. 17)
- Art. 31(1)(b) words substituted in earlier amending provision S.I. 2018/1401, reg. 86(a) by S.I. 2020/1301 reg. 3Sch. para. 11(g) (This amendment not applied to legislation.gov.uk. Reg. 86(a) omitted immediately before IP completion day by virtue of S.I. 2020/1470, reg. 1(4), Sch. 2 para. 17)
- Art. 31(1)(c) words inserted by S.I. 2018/1401 reg. 86(b) (This amendment not applied to legislation.gov.uk. Reg. 86(b) omitted immediately before IP completion day by virtue of S.I. 2020/1470, reg. 1(4), Sch. 2 para. 17)
- Art. 78(1)(b) words substituted by S.I. 2018/1401 reg. 94(2)(a) (This amendment not applied to legislation.gov.uk. Reg. 94(2) omitted (6.9.2019) by virtue of S.I. 2019/1232, regs. 1(2), 3(3)(h))
- Art. 78(1)(b) words substituted by S.I. 2018/1401 reg. 94(2)(b) (This amendment not applied to legislation.gov.uk. Reg. 94(2) omitted (6.9.2019) by virtue of S.I. 2019/1232, regs. 1(2), 3(3)(h))
- Art. 124(4)(b) word substituted by S.I. 2018/1401 reg. 225(1)(2)reg. 225(3)(b) (This amendment not applied to legislation.gov.uk. The words to be substituted in Art. 124(4) are not present following the substitution of Art 124 by Corrigendum to Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms and amending Regulation (EU) No 648/2012 (OJ L 176, 27.6.2013, p. 1).)
- Art. 242(10)(c) and word inserted by S.I. 2024/705 Sch. 2 para. 22(b)(ii)
- Art. 244(4)(c) words substituted by S.I. 2024/705 Sch. 2 para. 23
- art. 270a(1A) inserted by S.I. 2024/705 Sch. 2 para. 25(b)
- Art. 325(3)(a) word omitted by S.I. 2018/1401 reg. 157 (This amendment not applied to elgislation.gov.uk. The words to be omitted are not present in Art. 325(3)(a))
- Art. 450(1)(d) words substituted by 2021 c. 22 Sch. 1 para. 41 (This amendment not applied to legislation.gov.uk. Pt. 8 omitted (1.1.2022) by virtue of S.I. 2021/1078, regs. 1(1), 10 (as substituted by S.I. 2021/1376, regs. 1(2), 32(4)))
- Art. 456(1)(h)(i) omitted by S.I. 2021/1078 reg. 11(2)(a)(iv) (This amendment not applied to legislation.gov.uk. Amending provision substituted by S.I. 2021/1376)
- Art. 459(b) omitted by S.I. 2021/1078 reg. 11(5)(a) (This amendment not applied to legislation.gov.uk. Amending provision substituted by S.I. 2021/1376)
- Art. 459(c) words substituted by S.I. 2021/1078 reg. 11(5)(b) (This amendment not applied to legislation.gov.uk. Amending provision substituted by S.I. 2021/1376)