Completion Instructions

Return of Market Risk and CVA Risk Capital Charge
Part I – Market Risk Capital Charge: Divisions A to F
Form MA(BS)3A(I): Divisions A to F

Introduction

1. This set of completion instructions covers Divisions A to F of Form MA(BS)3A(I) ("the Form"). A reporting institution using the STM approach should complete Divisions A to D of the Form. A reporting using the IMA in respect of one or more trading desks should complete Divisions A to E of the Form.

2. Reporting institutions should read the completion instructions in conjunction with the Banking (Capital) Rules ("Rules"), Supervisory Policy Manual (SPM) MR-1 "Market risk capital charge" ("SPM MR-1") and other relevant supervisory policies as well as guidance related to the market risk capital framework. They should refer to section 2, Part 8 and Schedule 3 of the Rules for the definition of the terms in bold and italics used in this Form and its completion instructions.

Section A: Definitions and Clarification

3. A reporting institution should use the ***standardized (market risk) approach*** (***"STM approach"***) to calculate its market risk capital charge unless it has obtained the MA's approval to use the ***simplified standardized approach ("SSTM approach")***. The MA may also approve a reporting institution to use the ***internal models approach ("IMA")*** to calculate its market risk capital charge in respect of any one or more trading desks. Any reporting institution which has been approved by the MA to use the IMA to calculate its market risk is required to additionally report its market risk capital charge under the STM approach.

4. Subject to paragraph 6, a reporting institution should calculate its market risk capital charge to take into account the risk of losses arising from fluctuations in the value of:

    (a) the institution's ***trading book*** positions; and

    (b) the foreign exchange and commodity risk of the institution's ***banking book***.

    The institution should follow section 281A and 281B of the Rules to assign instruments into either the banking book or the trading book respectively.

5. A reporting institution must not move an instrument between its banking book and trading book after its initial assignment unless it is allowed to do so in accordance with section 281C of the Rules.

6. A reporting institution should not include a position in the calculation of its market risk capital charge if the position is:

    (a) the banking book leg of an ***eligible internal risk transfer***;

    (b) an exposure required to be deducted from any of the institution's ***Common Equity Tier 1 capital, Additional Tier 1 capital and Tier 2 capital*** in Part II of the Return of Capital Adequacy Ratio; or

    (c) an ***eligible CVA hedge*** obtained from an external counterparty or the CVA leg of an eligible CVA hedge obtained from its trading book internally.

7. A reporting institution may exclude a foreign exchange risk position from the calculation of its market risk capital charge for its foreign exchange risk if–

    (a) the position is taken or maintained by the institution for the purpose of hedging partially or totally against any adverse effect of exchange rate movements on its capital adequacy ratio;

    (b) the position is of a structural (that is, non-dealing) nature;

    (c) the institution's risk management policy for structural foreign exchange positions is approved by the MA;

    (d) the establishment of, and any changes to, the position follow the policy referred to in paragraph (c);

    (e) the exclusion is limited to the amount of the position that neutralizes the sensitivity of the capital adequacy ratio to movements in exchange rates;

    (f) the exclusion is made for at least 6 months;

    (g) the institution applies the exclusion consistently, with the exclusion treatment of the hedge remaining in place for the life of the assets or other items to which the position relates; and

    (h) the institution keeps comprehensive records of the position and the amount excluded from the market risk capital charge.

8. A reporting institution should comply with section 4A of the Rules when valuing its trading book positions, whether based on a ***marking-to-market*** or ***marking-to-model*** methodology. Among other things, this means the institution must value its positions in a prudent and reliable manner and consider making ***valuation adjustments*** to its positions as appropriate (including by taking into account the limitation of the valuation model or methodology and the data used by the institution in the valuation process, the liquidity of the positions and other relevant factors that might reasonably be expected to affect the prudence and reliability of the valuation of the positions).

9. A reporting institution should complete various divisions of this Form according to the following instructions:

(a) a reporting institution using the STM approach should complete Divisions A to D of the Form;

(b) a reporting institution using the IMA in respect of one or more trading desks should complete Divisions A to E of the Form; and

(c) a reporting institution using the SSTM approach should complete Divisions F to K of the Form.

Section B: STM Approach to the Calculation of Market Risk Capital Charge

10. The completion instructions in this section apply to reporting institutions adopting the STM approach to calculate their market risk capital charge. Such institutions include those approved by the MA to use the IMA to calculate the market risk capital charge in respect of any one or more trading desks but are required under the Rules to use the STM approach to calculate the market risk capital charge across all the trading desks.

11. Unless otherwise specified, a reporting institution should use the ***fair value*** of its positions to calculate the market risk capital charge. Where the stated ***notional amount*** of an exposure held by a reporting institution is leveraged or enhanced by the structure of the exposure, the institution should use the effective notional amount of the exposure (being the stated notional amount of the exposure adjusted to take into account the effect of the leverage or enhancement provided by the structure of the exposure) for the purpose of calculating the market risk capital charge.

B.1 Market risk capital charge under the STM approach

12. A reporting institution should follow Divisions 1A to 1D of Part 8 of the Rules and the guidance specified in section 3 of the SPM MR-1 to calculate the market risk capital charge under the STM approach, which is the sum of the following three components, as well as any capital surcharge specified elsewhere in the framework–

- ***Sensitivities-based method ("SBM")*** capital charges;
- ***Residual risk add-on ("RRAO")***; and
- ***Standardized default risk charge ("SA-DRC")***.

B.1.1 Division A of Form MA(BS)3A(I) – Market risk capital charge under the STM approach

13. Division A of the Form provides a summary of capital charges under the STM approach.

14. The SBM capital charges in item 1 of Division A of the Form should be extracted from Divisions B.1 to B.7 of the Form. A reporting institution should report in–

(a) column (1) of item 1 as the ***SBM delta*** risk capital charge, ***SBM vega*** risk capital charge and ***SBM curvature*** risk capital charge for each ***risk class*** under the correlation scenario that results the ultimate SBM capital charge;[1]

(b) column (2) of item 1 as the grand totals for SBM delta risk capital charge, SBM vega risk capital charge and SBM curvature risk capital charge across all risk classes; and

[1] For each correlation scenario, a reporting institution should calculate the simple sum of the SBM delta, SBM vega and SBM curvature risk capital charges for all risk classes to determine the overall SBM capital charge for that correlation scenario. The ultimate SBM capital charge is the largest capital charge from the three correlation scenarios.

(c) column (3) of item 1 as the ultimate SBM capital charge.

15. The residual risk add-on ("RRAO") in item 2 of Division A of the Form should be extracted from Division C of the Form. A reporting institution should report in–

(a) column (2) of item 2 as the RRAO for positions with an exotic underlying and the RRAO for positions bearing other residual risks that are reported in item 3 in Division C of the Form;

(b) column (3) of item 2 as the total RRAO.

16. The standardized default risk charge ("SA-DRC") in item 3 of Division A of the Form should be extracted from Division D.1 to D.3 of the Form. A reporting institution should report in–

(a) column (2) of item 3 as the SA-DRC for non-securitization exposures, securitization: non-CTP exposures and securitization: CTP exposures that are reported in item 4 of Division D.1, item 2 of Division D.2 and item 2 of Division D.3 of the Form respectively;

(b) column (3) of item 3 as the total SA-DRC.

17. A reporting institution should report other capital charges calculated on a standalone basis (for example, the capital charge for the internal risk transfer trading desk under the general interest rate risk[2] and the capital charge for equity investments in fund under the hypothetical portfolio approach[3]) in item 4; and the capital surcharge specified elsewhere in the framework (for example, the capital surcharge as a result of switching between the regulatory books[4]), if any, in item 5. The total market risk capital charge under the STM approach in item 6 is a simple sum of (i) the ultimate SBM capital charge, (ii) RRAO, (iii) SA-DRC and (iv) other capital charge or surcharge reported in column (3).

B.2 Sensitivities-based method ("SBM")

18. The SBM allows the use of sensitivities to capture risks within the seven risk classes. A reporting institution should calculate the SBM capital charge by aggregating the capital charges for the following risk measures in each risk class–

(a) SBM delta risk which captures the risk of changes in the market value of a position due to movements in its non-volatility linear risk factors;

(b) SBM vega risk which captures the risk of changes in the market value of a position due to movements in its volatility linear risk factors; and

[2] See paragraph 2.2.8 of the SPM MR-1.

[3] See paragraph 3.3.53 of the SPM MR-1.

[4] See paragraph 2.1.15 of the SPM MR-1.

(c) SBM curvature risk which captures the risk of changes in the market value of a position due to movements in its non-volatility risk factors not captured by the SBM delta risk.

For each risk class, the reporting institution should follow the step-by-step approaches set out in paragraphs 3.2.11 to 3.2.14 of the SPM MR-1 to determine the capital charges for (a), (b) and (c) above.

19. The seven risk classes are (i) general interest rate risk, (ii) credit spread risk (non-securitization), (iii) credit spread risk (securitizations: non-CTP), (iv) credit spread risk (securitizations: CTP), (v) equity risk, (vi) commodity risk and (vii) foreign exchange risk.

20. A reporting institution should calculate three SBM capital charges for each risk class, which correspond to three correlation scenarios (i.e. medium scenario, high scenario and low scenario). In each correlation scenario, there are specified values for the correlation parameters between risk factors within a bucket and the correlation parameters across buckets within a risk class.

B.2.1 Division B.1 of Form MA(BS)3A(I) – STM Approach – SBM: general interest rate risk

21. A reporting institution should report the SBM capital charges for general interest rate risk factors in Division B.1 of the Form. Each bucket represents an individual currency exposure to general interest rate risk, so all risk factors in risk-free yield curves for the same currency in which interest rate-sensitive instruments are denominated are grouped into the same bucket. A reporting institution should insert an additional row for any currency that is not part of the list in the table.

22. A reporting institution should calculate and report in item 1 the capital charge for each SBM delta, SBM vega and SBM curvature bucket under each correlation scenario. The bucket-level capital charges for SBM delta, SBM vega and SBM curvature are then aggregated under each correlation scenario and the reporting institution should report the aggregated figures in item 2. The total SBM capital charge in item 3 is a simple sum of SBM delta, SBM vega and SBM curvature risk capital charges obtained in item 2 under each correlation scenario. The corresponding risk weights and correlations for aggregation of capital charges are specified in paragraphs 3.4.2 to 3.4.8 and subsections 3.5 to 3.6 of the SPM MR-1.

B.2.2 Division B.2 of Form MA(BS)3A(I) – STM Approach – SBM: credit spread risk (non-securitization)

23. A reporting institution should report the SBM capital charges for credit spread (non-securitization) risk factors in Division B.2 of the Form. Buckets are differentiated by credit quality and sector. To assign a risk exposure to a sector, the institution should rely on a classification that is commonly used in the market for grouping issuers by industry sector. The institution should assign each issuer to one and only one of the sector buckets. Risk positions from any issuer that the institution cannot assign to a sector in this fashion should be assigned to the other sector bucket (i.e. bucket 16).

24. Similar to the general interest rate risk, a reporting institution should calculate and report the capital charge for each SBM delta, SBM vega and SBM curvature bucket under each correlation scenario in item 1. The aggregated capital charges for SBM delta, SBM vega and SBM curvature are reported in item 2. The total SBM capital charge in item 3 is the simple sum of them. The corresponding risk weights and correlations for aggregation of capital charges are specified in paragraphs 3.4.9 to 3.4.14 and subsections 3.5 to 3.6 of the SPM MR-1.

B.2.3 Division B.3 of Form MA(BS)3A(I) – STM Approach – SBM: credit spread risk (securitization: CTP)

25. A reporting institution should report the SBM capital charges for credit spread (securitization: CTP) risk factors in Division B.3 of the Form. Buckets are differentiated by credit quality and sector. The corresponding risk weights and correlations for aggregation of capital charges are specified in paragraphs 3.4.15 to 3.4.17 and subsections 3.5 to 3.6 of the SPM MR-1.

B.2.4 Division B.4 of Form MA(BS)3A(I) – STM Approach – SBM: credit spread risk (securitization: non-CTP)

26. A reporting institution should report the SBM capital charge for credit spread (securitization: non-CTP) risk factors in Division B.4 of the Form. Buckets are differentiated by credit quality and sector. The corresponding risk weights and correlations for aggregation of capital charges are specified in paragraphs 3.4.18 to 3.4.23 and subsections 3.5 to 3.6 of the SPM MR-1.

B.2.5 Division B.5 of Form MA(BS)3A(I) – STM Approach – SBM: equity risk

27. A reporting institution should report the SBM capital charge for equity risk factors in Division B.5 of the Form. Buckets are differentiated by market capitalisation, economy and sector. The corresponding risk weights and correlations for aggregation of capital charges are specified in paragraphs 3.4.24 to 3.4.34 and subsections 3.5 to 3.6 of the SPM MR-1.

B.2.6 Division B.6 of Form MA(BS)3A(I) – STM Approach – SBM: commodity risk

28. A reporting institution should report the SBM capital charge for commodity risk factors in Division B.6 of the Form. Several commodities of similar nature are grouped into single buckets. The corresponding risk weights and correlations for aggregation of capital charges are specified in paragraphs 3.4.35 to 3.4.39 and subsections 3.5 to 3.6 of the SPM MR-1.

B.2.7 Division B.7(a) of Form MA(BS)3A(I) – STM Approach – SBM: foreign exchange risk (SBM delta and SBM curvature risk)

29. A reporting institution should report the SBM delta and curvature risk capital charge for foreign exchange risk factors in Division B.7(a) of the Form.

30. A reporting institution should indicate whether it adopted a base currency during the reporting period in item 1 ("Yes" or "No"). The use of a base currency is subject to the approval of the MA. Additional guidance on the use of the base currency is specified in paragraphs 3.3.29 to 3.3.30 of the SPM MR-1.

31. A reporting institution that adopted a base currency should report the base currency adopted in item 2. Otherwise, the reporting institution should fill in "Not applicable" in item 2.

32. The corresponding risk weights and correlations for aggregation of capital charges are specified in paragraphs 3.4.40 to 3.4.44 and subsection 3.6 of the SPM MR-1.

33. For the purposes of this subsection, each currency against the Hong Kong dollars or each currency against the base currency represents a bucket. For the bucket of the Hong Kong dollars–

(a) in terms of SBM delta risk, it is only applicable to reporting institutions that adopt a base currency;

(b) in terms of SBM curvature risk, it is only applicable to reporting institutions that–

(i) adopt a base currency; or

(ii) subject to the approval of the MA, divide the CVR_k^+ and CVR_k^- by 1.5 for all foreign exchange instruments (see paragraph 3.6.3 of the SPM MR-1).

34. A reporting institution should insert an additional row for any currency that does not list in the table.

B.2.8 Division B.7(b) of Form MA(BS)3A(I) – STM Approach – SBM: foreign exchange risk (SBM vega risk)

35. A reporting institution should report the SBM vega risk capital charge for foreign exchange risk under each correlation scenario in Division B.7(b) of the Form. The corresponding risk weights and correlations for aggregation of capital charges are specified in subsection 3.5 of the SPM MR-1.

36. For the purpose of this subsection, each currency pair represents a bucket. A reporting institution should insert an additional row for any currency pair that is not listed in the table.

37. A reporting institution should report the total SBM capital charge for foreign exchange risk as the sum of SBM delta, SBM vega and SBM curvature risk capital charges reported in item 4 of Division B.7(a) of the Form and item 2 of Division B.7(b) of the Form.

B.2.9 Division B.7(c) of Form MA(BS)3A(I) – STM Approach – SBM: foreign exchange risk (structural foreign exchange positions excluded from market risk capital charge)

38. As mentioned in paragraph 7, a reporting institution may exclude a foreign exchange risk position from the calculation of its market risk capital charge for its foreign exchange risk if certain requirements are fulfilled. The institution should report those excluded foreign exchange risk positions Division B.7(c) of the Form.

39. For each currency, a reporting institution should report the amount of the structural position exempted during the reporting period in columns (1) and (2) with respect to the foreign currency and HKD, and the amount of the position that perfectly neutralises the sensitivity of the capital ratio to its movement against Hong Kong dollars in columns (3) and (4). The amount reported in column (4) is regarded as the amount of maximum exclusion for the currency concerned during the reporting period, expressed in HKD equivalent. The reporting institution should follow the mechanism or methodology as set out in the risk management policy mentioned in paragraph 7 to determine the amounts reported in each column.

40. A reporting institution that is approved by the MA to use the IMA to calculate the market risk capital charge in respect of any one or more trading desks should report the structural foreign exchange positions across all trading desks.

B.3 Residual risk add-on

41. Residual risk add-on ("RRAO") captures any other risks beyond the main risk factors already captured in the SBM and the SA-DRC. It provides for a simple and conservative capital treatment for the universe of more sophisticated instruments. Subject to paragraphs 42 and 43, a reporting institution must calculate the RRAO for any instrument in its trading book—

(a) with an exotic underlying, if the risk profile of the underlying exposure of the instrument is not captured by the SBM or SA-DRC; or

(b) bearing other residual risks, if—

(i) the instrument is subject to SBM vega risk capital charges or SBM curvature risk capital charges in the trading book and with pay-offs that cannot be written or perfectly replicated as a finite linear combination of vanilla options with a single underlying equity price, commodity price, exchange rate, bond price, credit default swap price or interest rate swap; or

(ii) the instrument is in the institution's CTP and is not recognized as an eligible hedge of risks within the CTP.

42. A reporting institution is not required to calculate the RRAO for an instrument that is a back-to-back transaction that exactly matches with a third-party transaction in the trading book and, in that case, both the back-to-back transaction and the third-party transaction may be excluded from the institution's RRAO.

43. A reporting institution is not required to calculate the RRAO for an instrument that bears other residual risks as referred to in paragraph 41(b), if the instrument—

(a) is listed on an exchange; or

(b) is eligible for central clearing.

However, such an instrument may still be subject to the RRAO if it is with an exotic underlying as referred to in paragraph 41(a).

44. If a reporting institution treats an equity investment in a collective investment scheme as an unrated equity exposure and assigns it to "other sectors" under the sector classification, the institution must assume that the scheme is exposed to exotic underlying exposures, and to other residual risks, to the maximum possible extent allowed under the scheme's mandate.

45. Additional guidance on identifying instruments that fall into the two categories and are subject to the RRAO is specified in subsection 3.7 of the SPM MR-1.

B.3.1 Division C of Form MA(BS)3A(I) – STM Approach – RRAO

46. A reporting institution should report the sum of the gross notional amounts (i.e. long plus short) for positions with an exotic underlying and positions bearing other residual risks in item 1.

47. A reporting institution should calculate and report the RRAO in item 2 as item 1 multiplied by the following risk-weights—

(a) 1.0% for instruments with an exotic underlying;

(b) 0.1% for instruments bearing other residual risks.

48. For an instrument with a varying notional amount, a reporting institution should report the notional amount of such an instrument based on the largest notional amount in between the reporting date and the maturity date of such an instrument.

49. For an instrument that tracks an exotic underlying but also bears other residual risks, a reporting institution should report the notional amount and the RRAO of such an instrument under the category of "Positions with an exotic underlying" in column (1).

B.4 Standardized default risk charge

50. The standardized default risk charge ("SA-DRC") captures the jump-to-default risk for equity and credit instruments. A reporting institution should calculate the SA-DRC in three components: (i) non-securitization, (ii) securitizations (non-CTP) and (iii) securitizations (CTP). The final SA-DRC is the simple sum of the three components.

51. A reporting institution should apply the following step-by-step approach to determine the SA-DRC for each component:

(a) determine the gross JTD risk amount for each instrument subject to default risk separately;
(b) determine the net JTD risk amount with respect to each obligor by offsetting the gross JTD risk amount of long and short exposures with respect to the same obligor (where permissible);

(c) determine the risk-weighted net JTD risk amount by prescribed risk weights and allocate them into different buckets (taking into account the hedging benefit ratio within the bucket) for the calculation of bucket level DRC; and

(d) determine the overall SA-DRC based on the bucket level DRC.

B.4.1 Division D.1 of Form MA(BS)3A(I) – STM Approach – SA-DRC (non-securitization)

52. A reporting institution should report the SA-DRC for non-securitization exposures in Division D.1 of the Form. Figures should be calculated and reported for each bucket (i.e. corporates, sovereigns, and local governments and municipalities).

53. Within a bucket, a reporting institution should report–

(a) the sum of all net long jump-to-default risk amounts in column (1), (6) and (11) of item 1;

(b) the sum of all net short jump-to-default risk amounts in column (2), (7) and (12) of item 1;

(c) the sum of all risk-weighted net long jump-to-default risk amounts in column (4), (9) and (14) of item 1;

(d) the sum of all risk-weighted net short jump-to-default risk amounts in column (5), (10) and (15) of item 1;

(e) in item 2 the hedge benefit ratio as calculated in accordance with paragraph 3.9.15 of the SPM MR-1; and

(f) in item 3 the bucket-level SA-DRC as calculated in accordance with paragraph 3.9.15 of the SPM MR-1.

54. For the purpose of paragraph 53 and with reference to paragraph 3.9.15 of the SPM MR-1–

(a) the sum of all net long jump-to-default risk amounts refers to $\sum net\ JTD_{long}$;

(b) the sum of all net short jump-to-default risk amounts refers to $\sum |net\ JTD_{short}|$;

(c) the sum of all risk-weighted net long jump-to-default risk amounts refers to $\sum_{i \in Long} RW_i \cdot net\ JTD_i$; and

(d) the sum of all risk-weighted net short jump-to-default risk amounts refers to $\sum_{i \in Short} RW_i \cdot |net\ JTD_i|$.

55. For avoidance of doubt, the reporting institution should report the sum of all net short jump-to-default risk amounts and the sum of all risk-weighted net short jump-to-default risk amounts in terms of absolute value of the net jump-to-default risk amounts.

56. A reporting institution should report the SA-DRC for non-securitization exposures in item 4 as a simple sum of the bucket-level SA-DRC reported in item 3.

B.4.2 Division D.2 of Form MA(BS)3A(I) – STM Approach – SA-DRC (securitization: non-CTP)

57. A reporting institution should report the SA-DRC for securitization exposures that do not fall within the correlation trading portfolio in Division D.2 of the Form.

58. A reporting institution should report in item 1 the bucket-level SA-DRC as calculated in accordance with paragraph 3.10.8 of the SPM MR-1.

59. A reporting institution should report in item 2 the SA-DRC for securitization exposures that do not fall within the correlation trading portfolio as a simple sum of the bucket-level SA-DRC reported in item 1.

B.4.3 Division D.3 of Form MA(BS)3A(I) – STM Approach – SA-DRC (securitization: CTP)

60. A reporting institution should report the SA-DRC for securitization exposures that fall within the correlation trading portfolio in Division D.3 of the Form.

61. A reporting institution should report in item 1 the bucket-level SA-DRC as calculated in accordance with paragraph 3.11.13 of the SPM MR-1. For the purpose of this paragraph, a bucket refers to a credit index or an underlying basket. The reporting institution should specify each bucket properly.

62. A reporting institution should report in item 2 the SA-DRC for securitization exposures that fall within the correlation trading portfolio in accordance with paragraph 3.11.14 of the SPM MR-1.

Section C: IMA to the Calculation of Market Risk Capital Charge

63. A reporting institution which has been approved by the MA to use the IMA to calculate its market risk capital charge in respect of any one or more trading desks is required to complete Division E of the Form.[5]

C.1 Market risk capital charge under the IMA

64. Unless otherwise specified, reporting institutions should follow Division 13 of Part 8 of the Rules and the guidance specified in section 4 of the SPM MR-1 to calculate the market risk capital charge under the IMA.

C.1.1 Division E.1(A) of Form MA(BS)3A(I) – Market risk capital charge under the IMA: calculation of market risk capital charge

65. In relation to modellable risk factors, a reporting institution should report–

(a) in item 1.1 the unconstrained ***ES*** capital charge at the portfolio-wide level, referring to the unconstrained ES capital charge at the portfolio-wide level refers to *IMCC(C)* in paragraph 4.5.16 of the SPM MR-1, as at the last trading day of the reporting month in column (a) and the respective average value for the last 60 trading days in column (b);

(b) in item 1.2 the sum of constrained ES capital charges at the risk class level, referring to $\sum_{i=1}^{5} IMCC(C_i)$ in paragraph 4.5.16 of the SPM MR-1, as at the last trading day of the reporting month in column (a) and the respective average value for the last 60 trading days in column (b); and

(c) in item 1.3 the market risk capital charge for all ***modellable risk factors***, referring to *IMCC* in paragraph 4.5.16 of the SPM MR-1, as at the last trading day of the reporting month in column (a) the respective average value for the last 60 trading days in column (b); and

66. A reporting institution should report in column (c) of item 1.3 the number of ***backtesting*** exceptions in relation to the one-day 99% ***VaR*** for the last 250 trading days of the reporting month (i.e. from the reporting month end going backwards) based on the actual daily changes in portfolio value. Similarly, the institution should report in column (d) of item 1.3 the number of backtesting exceptions in relation to the one-day 99% VaR for the last 250 trading days of the reporting month based on the hypothetical changes in portfolio value that would occur if end-of-day positions remained unchanged during the one day holding period.

67. A reporting institution should report in column (e) of item 1.3 the multiplication factor, which is determined in accordance with section 322E of the Rules and paragraph 4.4.9 of the SPM MR-1.

[5] The reporting institution is also required to fill in Divisions A to D of the Form. See paragraph 10.

68. A reporting institution should report in column (f) of item 1.3 the total market risk capital charge in relation to the modellable risk factors for the approved trading desks as–

(a) the institution's market risk capital charge for all modellable risk factors as at the last trading day of the reporting month (referring to $IMCC_{t-1}$ in paragraph 4.8.2 of the SPM MR-1); or

(b) the product of the average market risk capital charge for all modellable risk factors for the last 60 trading days and the multiplication factor (referring to $m_c \cdot IMCC_{avg}$ in paragraph 4.8.2 of the SPM MR-1),

depending on whether $IMCC_{t-1} + SES_{t-1}$ or $m_c \cdot IMCC_{avg} + SES_{avg}$ is higher in the formula.

69. In relation to ***non-modellable risk factors ("NMRFs")***, a reporting institution should report–

(a) in item 2.1 the ***stress scenario capital charge*** for ***idiosyncratic credit spread NMRFs***, referring to $\sqrt{\sum_{i=1}^{I} ISES_{NM,i}^2}$ in paragraph 4.6.4 of the SPM MR-1 as at the last trading day of the reporting month;

(b) in item 2.2 the stress scenario capital charge for ***idiosyncratic equity NMRFs***, referring to $\sqrt{\sum_{j=1}^{J} ISES_{NM,j}^2}$ in paragraph 4.6.4 of the SPM MR-1, as at the last trading day of the reporting month;

(c) in item 2.3 the stress scenario capital charge for all other NMRFs, referring to $\sqrt{\left(0.6 \cdot \sum_{k=1}^{K} SES_{NM,k}\right)^2 + 0.64 \cdot \sum_{k=1}^{K} SES_{NM,k}^2}$ in paragraph 4.6.4 of the SPM MR-1, as at the last trading day of the reporting month; and

(d) in item 2.4 the market risk capital charge for all NMRFs, referring to *SES* in paragraph 4.6.4 of the SPM MR-1, as at the last trading day of the reporting month in column (a) and the respective average value for the last 60 trading days in column (b).

70. A reporting institution should report in column (f) of item 2.4 the market risk capital charge in relation to the NMRFs for the approved trading desks as–

(a) the institution's market risk capital charge for all NMRFs as at the last trading day of the reporting month (referring to SES_{t-1} in paragraph 4.8.2 of the SPM MR-1); or

(b) the average market risk capital charge for all NMRFs for the last 60 trading days (referring to SES_{avg} in paragraph 4.8.2 of the SPM MR-1), depending on whether $IMCC_{t-1} + SES_{t-1}$ or $m_c \cdot IMCC_{avg} + SES_{avg}$ is higher in the formula.

71. A reporting institution should report in item 3 the ***default risk charge*** calculated by the internal models. The default risk charge as at the last trading day of the reporting month should be reported in column (a) and the average default risk charge for the last 12 weeks should be reported in column (b). The higher of the two figures should be reported in column (f).

72. A reporting institution should report in item 4 the capital surcharge for approved trading desks assigned to the yellow zone in the profit and loss attribution test which is determined in accordance with paragraph 4.8.6 of the SPM MR-1 .

73. A reporting institution should report in item 5 the market risk capital charge under the STM approach for approved trading desks assigned to the green and yellow zone in the ***profit and loss attribution test***.[6] This figure refers to $SA_{G,Y}$ in paragraph 4.8.4 of the SPM MR-1.

74. A reporting institution should report in item 6 the market risk capital charge under the STM approach for (i) approved trading desks assigned to the red zone in the profit and loss attribution test and/or failed the desk-level backtesting requirements, and (ii) trading desks that are not approved trading desks. This figure refers to C_u in paragraph 4.8.4 of the SPM MR-1.

75. A reporting institution should report in item 7 the market risk capital charge under the STM approach for all trading desks. This figure refers to $SA_{all\ desks}$ in paragraph 4.8.4 of the SPM MR-1.

76. A reporting institution should report in item 8 other capital charges calculated on a standalone basis (for example, the capital charge for the internal risk transfer trading desk under the general interest rate risk and the capital charge for equity investments in fund under the hypothetical portfolio approach); and in item 9 the capital surcharge specified elsewhere in the framework (for example, the capital surcharge as a result of switching between the regulatory books), if any.

77. The total market risk capital charge to be reported in item 10 is the sum of

(a) MR_{total} in paragraph 4.8.4 of the SPM MR-1; and
(b) the capital charge/surcharge in items 8 and 9.

C.1.2 Division E.1(B) of Form MA(BS)3A(I) – Market risk capital charge under the IMA: Constrained ES capital charge at the risk class level for modellable risk factors

78. A reporting institution should report the constrained ES capital charge for each risk class. The institution should report the figure as at the last trading day of the reporting month and the average figure for the last 60 trading days.

[6] A reporting institution should disregard the results of the profit and loss attribution test for capital purposes during the first year since the full implementation date, i.e. the institution should assume all trading desks are assigned to the green zone of the profit and loss attribution test during this period.

79. For the purpose of paragraph 78, the constrained ES capital charge for a risk class refers to $IMCC(C_i)$ in paragraph 4.5.16 of the SPM MR-1.

C.1.3 Division E.1(C) of Form MA(BS)3A(I) – Market risk capital charge under the IMA: stress scenario capital charge for NMRFs other than the idiosyncratic equity and credit spread NMRFs

80. A reporting institution should report the sum of the stress scenario capital charge and the sum of the square of the stress scenario capital charge for NMRFs other than the idiosyncratic equity and credit spread NMRFs in each risk class as at the last trading day of the reporting month.

81. For the purpose of paragraph 80 and with reference to paragraph 4.6.4 of the SPM MR-1–

(a) the sum of the stress scenario capital charge in a risk class refers to $\sum_{k=1}^{K} SES_{NM,k}$ on the condition that all the NMRFs k belong to the same risk class; and

(b) the sum of the square of the stress scenario capital charge in a risk class refers to $\sum_{k=1}^{K} SES_{NM,k}^{2}$ on the condition that all NMRFs k belong to the same risk class.

C.1.4 Division E.2 of Form MA(BS)3A(I) – Backtesting exceptions at the portfolio-wide level over the last 250 trading days

82. A reporting institution should report in Division E.2 of the Form the details of all backtesting exceptions against the one-day 99% VaR at the portfolio-wide level over the last 250 trading days (i.e. from the reporting month end going backwards). On each date of exception, institutions should report the respective (i) one-day 99% VaR, (ii) actual profits and loss and (iii) hypothetical profits and loss (i.e. assuming end-of-day positions remained unchanged during the one day holding period).

C.1.5 Division E.3 of Form MA(BS)3A(I) – Largest daily losses over the quarter

83. A reporting institution should report in Division E.3 of the Form in descending order (i) the five largest daily losses over the reporting quarter and (ii) their respective one-day 99% VaR for the exposures calculated by the internal models. If the number of daily losses during the reporting quarter is less than five, only all of such daily losses should be reported.

C.1.6 Division E.4 of Form MA(BS)3A(I) – Trading desk details

84. A reporting institution should report in Division E.4 of the Form the information of each approved trading desk. For each approved trading desk, a reporting institution should assign a unique desk ID. The same desk ID should be used for a given approved trading desk consistently over time. The reporting institution should fill in the table for each approved trading desk.

85. A reporting institution should describe the risk class, instruments held and the trading strategy, where applicable, for each approved trading desk.

86. A reporting institution should calculate and report in items 1 to 4 the components of the total market risk capital charge under the STM approach (i.e. the SBM capital charge, RRAO and SA-DRC) for each approved trading desk.

87. For each approved trading desk, a reporting institution should report in items 5 to 10 the results of the backtesting requirements under paragraphs 4.4.15 to 4.4.18 of the SPM MR-1. These include–

(a) the one-day 99% and 97.5% VaR on the reporting date; and

(b) the number of backtesting exceptions against the one-day 99% and 97.5% VaR over the last 250 trading days (i.e. from the reporting month end going backwards) based on–

(i) the actual daily changes in portfolio value; and

(ii) the hypothetical changes in portfolio value that would occur if end-of-day positions remained unchanged during the one day holding period.

88. For each approved trading desk, a reporting institution should report in items 11 to 13 the results of the profit and loss attribution test under paragraphs 4.4.19 to 4.4.36 of the SPM MR-1. These include–

(a) the Spearman correlation metric[7]; and

(b) the Kolmogorov-Smirnov distribution test metric[8]; and

(c) the zone assigned to the trading desk (i.e. green, yellow or red).

[7] See paragraph 4.4.34 of the SPM MR-1.

[8] See paragraph 4.4.35 of the SPM MR-1.

Section D: SSTM Approach to the Calculation of Market Risk Capital Charge

89. A reporting institution approved by the MA to adopt the SSTM approach to calculate the market risk capital charge for general market risk and specific risk in respect of all exposure types is required to complete Divisions F to K of the Form.

90. The SSTM approach is a recalibrated version of the Basel II Standardised Approach. As such, a reporting institution should first calculate the market risk capital charges for each risk category in accordance with sections 286 to 312 of the Rules and then multiply the capital charges by the specified scalars (i.e. 1.3 for interest rate risk, 3.5 for equity risk, 1.9 for commodity risk and 1.2 for foreign exchange risk) in accordance with paragraph 5.2.1 of the SPM MR-1.

91. Unless otherwise specified, a reporting institution should follow sections 282 to 312 of the Rules and the guidance specified in section 5 of the SPM MR-1 to calculate the market risk capital charge under the SSTM approach.

D.1 Division F of Form MA(BS)3A(I) – Market risk capital charge under the SSTM approach

92. Division F of the Form provides a summary of capital charges calculated under the SSTM approach.

93. The market risk capital charges calculated under the SSTM approach for each risk category in accordance with sections 286 to 312 of the Rules should be reported in column (1) of items 1 to 4 of Division F of the Form. A reporting institution should also report the respective grand total for each risk category and multiply the grand total with the specified scalars in column (2) to report the total market risk capital charges for each risk category in column (3).

94. In particular, a reporting institution should report in column (1) of–

(a) item 1.1, extracted from Division G.1(a), the market risk capital charge for specific risk for its trading book positions in specific risk interest rate exposures that satisfy all of the following criteria: (a) they are non-securitization exposures; (b) they do not fall within a correlation trading portfolio; and (c) they are not n^{th}-to-default credit derivative contracts, calculated in accordance with section 287 of the Rules;

(b) item 1.2, extracted from Division G.1(b), the market risk capital charge for specific risk for its trading book positions (whether long or short) in all securitization exposures that do not fall within a correlation trading portfolio, calculated in accordance with section 287A of the Rules;

(c) item 1.3, extracted from Division G.1(c), the market risk capital charge for specific risk for its trading book positions (whether long or short) in non-securitization exposures that are n^{th}-to-default credit derivative contracts (excluding those that fall within a correlation trading portfolio), calculated in accordance with section 287 and Division 10 of the Rules;

(d) item 1.4, extracted from Division G.2, the market risk capital charge for general market risk for its trading book positions in interest rate exposures, calculated in accordance with sections 288 to 290 of the Rules;

(e) items 1.5 and 1.6, extracted from Division K.1(a) and K.1(b), the market risk capital charge for its debt-related and interest rate option exposures under the simplified approach, calculated in accordance with Division 8 of the Rules, where applicable;

(f) item 1.7, extracted from Division K.2(a), the market risk capital charge for its debt-related and interest rate option exposures in relation to vega and gamma risks under the delta-plus approach, calculated in accordance with Division 9 of the Rules, where applicable;

(g) item 2.1, extracted from Division H, the market risk capital charge for specific risk for its trading book positions in equity exposures, calculated in accordance with section 293 of the Rules;

(h) item 2.2, extracted from Division H, the market risk capital charge for general risk for its trading book positions in equity exposures, calculated in accordance with section 294 of the Rules;

(i) items 2.3 and 2.4, extracted from Division K.1(a) and K.1(b), the market risk capital charge for its equity option exposures under the simplified approach, calculated in accordance with Division 8 of the Rules, where applicable;

(j) item 2.5, extracted from Division K.2(b), the market risk capital charge for its equity option exposures in relation to gamma and vega risks under the delta-plus approach, calculated in accordance with Division 9 of the Rules, where applicable;

(k) item 3.1, extracted from Division I(A), the market risk capital charge for its trading book positions in foreign exchange (including gold) exposures, calculated in accordance with section 296 of the Rules;

(l) items 3.2 and 3.3, extracted from Division K.1(a) and K.1(b), the market risk capital charge for its foreign exchange (including gold) option exposures under the simplified approach, calculated in accordance with Division 8 of the Rules, where applicable;

(m) item 3.4, extracted from Division K.2(c), the market risk capital charge for its foreign exchange (including gold) option exposures in relation to gamma and vega risks under the delta-plus approach, calculated in accordance with Division 9 of the Rules, where applicable;

(n) item 4.1, extracted from Division J, the market risk capital charge for its trading book positions in commodity exposures, calculated in accordance with section 298 of the Rules;

(o) items 4.2 and 4.3, extracted from Division K.1(a) and K.1(b), the market risk capital charge for commodity option exposures under the simplified approach, calculated in accordance with Division 8 of the Rules, where applicable; and

(p) item 4.4, extracted from Division K.2(d), the market risk capital charge for its commodity exposures in relation to vega and gamma risks under the delta-plus approach, calculated in accordance with Division 9 of the Rules, where applicable.

95. A reporting institution should report in item 5 other capital charges calculated on a standalone basis (for example, the capital charge for the internal risk transfer trading desk under the general interest rate risk and the capital charge for equity investments in fund under the hypothetical portfolio approach); and item 6 the capital surcharge specified elsewhere in the framework (for example, the capital surcharge as a result of switching between the regulatory books), if any.

96. The total market risk capital charge under the SSTM approach is equal to the sum of total market risk capital charges for each risk category (i.e. column (3) of item 1 to 4) and the capital charge/surcharge (i.e. items 5 and 6).

97. Completion instructions for Divisions G to K are set out in a separate document which is largely the same as the completion instructions of the Form MA(BS)3(IV) prior to the implementation of the new market risk capital framework, subject to necessary modifications.

Hong Kong Monetary Authority
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