

Consultation paper | CP 15.01

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**Implementation of Basel  
standards relating to  
counterparty credit risk  
and banks' equity  
investment in funds**



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# I INTRODUCTION

## 1 Overview

- 1 - In 2013 and 2014, the Basel Committee on Banking Supervision (BCBS) issued three standards relating to banks' capital requirements for their exposures to counterparty credit risk (CCR), exposures to central counterparties (CCPs) and equity investments in funds. These standards can be found in the following documents—
  - (i) - *Capital requirements for bank exposures to central counterparties* (April 2014)<sup>1</sup> (BCBS CCP Standards);
  - (ii) - *The standardised approach for measuring counterparty credit risk exposures* (March 2014 (rev. April 2014))<sup>2</sup> (BCBS SA-CCR Standards); and
  - (iii) - *Capital requirements for banks' equity investments in funds* (December 2013)<sup>3</sup> (BCBS Funds Standards).
- 2 - The MA proposes to implement each of these standards with effect from 1 January 2017 in accordance with the BCBS implementation timetable. This consultation paper outlines the MA's proposals for implementation.
- 3 - The consultation will close on 30 November 2015.

## 2 Structure of this Consultation Paper

- 4 - Section II outlines the MA's proposed approach to implementing the new BCBS standardised approach for measuring counterparty credit risk exposures (SA-CCR). The MA also proposes to make available a modified current exposure method for use by certain BSC AIs. This is discussed in Section III.
- 5 - Section IV outlines the major amendments made by the BCBS to the capital requirements for bank exposures to CCPs which are proposed to be implemented in Hong Kong.
- 6 - Section V describes the MA's proposals to implement the capital requirements for banks' equity investments in funds.

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<sup>1</sup> <http://www.bis.org/publ/bcbs282.pdf>

<sup>2</sup> <http://www.bis.org/publ/bcbs279.pdf>

<sup>3</sup> <http://www.bis.org/publ/bcbs266.pdf>

- 7 The proposed implementation timeline for the three sets of capital standards is set out in Section VI. -

## II STANDARDIZED APPROACH FOR MEASURING CCR EXPOSURES (SA-CCR)

### 1 Scope of Application

- 8 - Basel II provides three methods for banks to measure their CCR exposures. These are: the CEM, the standardised method (SM)<sup>4</sup> and, with prior supervisory approval, the internal model method. The SA-CCR has been introduced by the BCBS to replace the CEM and the SM in order to address deficiencies identified in respect of these two existing methods.
- 9 - The MA proposes that AIs currently using the STC approach and/or the IRB approach must use the SA-CCR or, with prior approval from the MA, the IMM(CCR) approach, to measure their CCR exposures arising from derivative contracts (including exchange-traded contracts and long settlement transactions). However, for less sophisticated AIs with limited CCR exposure, the MA is proposing that, subject to certain conditions being met, they may be permitted to use a “modified CEM” to measure their CCR exposure arising from derivative contracts. Details of the proposed conditions and the modified CEM are set out in Section III.

### 2 Calculation of CCR Exposures under SA-CCR<sup>5</sup>

- 10 - Under the SA-CCR, an AI will be required to calculate the amount of its CCR exposure in respect of its portfolio of derivative contracts with a counterparty as follows—

$$\text{CCR exposure amount}^6 = 1.4 * (\text{RC} + \text{PFE})$$

where—

- RC is the replacement cost calculated in the manner described in [subsection 3](#) below; and
- PFE is the potential future exposure calculated in the manner described in [subsection 4](#) below.

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<sup>4</sup> The SM has not been implemented in Hong Kong.

<sup>5</sup> Basel II Annex 4 Paras. 128 and 129 added by the BCBS SA-CCR Standards.

<sup>6</sup> “CCR exposure amount” is equivalent to the term “default risk exposure” defined in the BCR.

- 11 - The CCR exposure amount for a margined netting set is capped at the CCR exposure amount of the same netting set calculated on an unmargined basis.

### 3 Replacement Cost

#### 3.1 Unmargined Transactions

- 12 - The replacement cost of unmargined transactions in a netting set is calculated as follows:

$$RC = \max(V - C; 0)$$

where—

- V is the market value of the derivative contracts in the netting set; and
- C is the value of net collateral held after applying supervisory haircuts applicable to the collateral.

- 13 - Further details in respect of the calculation are set out in Basel II Annex 4 Paras. 130 – 138 (added by the BCBS SA-CCR Standards).

#### 3.2 Margined Transactions

- 14 - The replacement cost of margined transactions in a netting set is calculated as follows:

$$RC = \max(V - C; TH + MTA - NICA; 0)$$

where—

- V is the market value of the derivative contracts in the netting set;
- C is the value of net collateral held after applying supervisory haircuts applicable to the collateral;
- TH is the positive threshold before the counterparty concerned is required to post collateral with the AI concerned;
- MTA is the minimum transfer amount applicable to the counterparty; and
- NICA is the net independent collateral amount which is calculated as the amount of independent collateral (e.g. initial margin) posted to the AI less the amount of independent collateral posted by the AI that is not held in a bankruptcy-remote account.

- 15 - Further details in respect of the calculation are set out in Basel II Annex 4 Paras. 131 – 135 and 139 – 145 (added by the BCBS SA-CCR Standards).

## 4 Potential Future Exposure

### 4.1 PFE of a Netting Set<sup>7</sup>

16 - The potential future exposure of transactions in a netting set is calculated as follows:

$$PFE = multiplier \cdot AddOn^{aggregate}$$

where—

- multiplier is a function which imposes a cap on the extent to which collateral held by an AI in excess of the net market value of its derivative contracts can be used to reduce the amount of PFE of the contracts; and
- AddOn<sup>aggregate</sup> is the sum of the add-ons calculated for the five asset classes shown in Table 1.

### 4.2 Allocation of Contracts to Asset Classes and Hedging Sets

17 - An AI is required to allocate its derivative contracts in a netting set to one of five asset classes and then further divide the contracts within each asset class into hedging sets. These, together with the extent to which the offsetting of positions can be effected within each asset class, are described in Table 1<sup>8</sup>.

Asset class	Hedging set	Offsetting
<b>Interest rate</b>	Derivatives referencing interest rates of the same currency are regarded as one hedging set	<ul style="list-style-type: none"> <li>◆ Long and short positions falling within the same maturity bucket in the same hedging set can be fully offset</li> <li>◆ Partial offsetting across maturity buckets</li> </ul>
<b>Foreign exchange</b>	Derivatives referencing the same currency pair (e.g. USD/Yen) are regarded as one hedging set	<ul style="list-style-type: none"> <li>◆ Long and short positions in the same hedging set can be fully offset</li> <li>◆ No offsetting across hedging sets</li> </ul>

<sup>7</sup> Basel II Annex 4 Paras. 146 - 150 added by the BCBS SA-CCR Standards.

<sup>8</sup> Basel II Annex 4 Paras. 161 – 163 added by the BCBS SA-CCR Standards.



Asset class	Hedging set	Offsetting
<b>Credit</b>	One hedging set for all credit derivatives	<ul style="list-style-type: none"> <li>◆ Full offsetting for derivatives referencing the same entity / index</li> <li>◆ Partial offsetting across derivatives referencing different entities / indices</li> </ul>
<b>Equity</b>	One hedging set for all equity derivatives	Same as credit derivatives
<b>Commodity</b>	Four hedging sets: <ul style="list-style-type: none"> <li>◆ Energy</li> <li>◆ Metals</li> <li>◆ Agricultural</li> <li>◆ Other commodities</li> </ul>	<ul style="list-style-type: none"> <li>◆ Within each hedging set, full offsetting for derivatives referencing the same commodity type and partial offsetting across derivatives referencing different commodity types</li> <li>◆ No offsetting across different hedging sets</li> </ul>

Table 1 -

18 Als should allocate derivative contracts to asset classes by reference to the primary risk driver of the derivative contract concerned. For contracts that may have more than one risk driver, Als should determine which risk driver is the primary one, taking into account sensitivities and volatility of the underlying risk factors. However, the MA may, by written notice, require an AI to allocate its complex contracts to more than one asset class if the MA believes that this is necessary to ensure prudent capitalization of the risks concerned<sup>9</sup>. Moreover, if the MA considers that an AI is significantly exposed to the basis risk in respect of the different products within a predefined hedging set (i.e. energy, metals, agricultural, or other commodities), the MA may, by written notice, require the AI to use more refined definitions of commodity types for the purposes of the calculation of the commodity type level add-ons (e.g. instead of regarding Brent oil and Saudi Light oil as falling within the same commodity type, they should be regarded as two separate commodity types)<sup>10</sup>.

<sup>9</sup> Basel II Annex 4 Paras. 151 and 152 added by the BCBS SA-CCR Standards.

<sup>10</sup> Basel II Annex 4 Paras. 181 and 182 added by the BCBS SA-CCR Standards.

### 4.3 Calculation of Add-ons at the Level of Hedging Set

- 19 - In general, the add-on for a derivative contract can be calculated as follows (AIs should refer to the BCBS SA-CCR Standards for the exact formulation for each of the five asset classes):

$$AddOn = D \cdot SF$$

$$D = N \cdot MF \cdot \delta$$

where—

- D is the effective notional amount of derivative contract;
  - N is the adjusted notional amount<sup>11</sup> of the contract;
  - MF is a maturity factor<sup>12</sup> to reflect the time risk horizon of the contract;
  - $\delta$  is a supervisory delta adjustment<sup>13</sup> to reflect the direction and non-linearity of the contract; and
  - SF is the supervisory factor<sup>14</sup> to reflect the volatility of the asset class into which the contract falls.
- 20 - For interest rate and foreign exchange derivative contracts, the add-on for a hedging set is calculated as the product of the aggregate of the effective notional amounts of the individual contracts within the hedging set and the SF applicable to the asset class concerned. The way in which the effective notional amounts are aggregated varies by asset class and depends on the extent of offsetting permitted within a hedging set<sup>15</sup>.
- 21 - In the case of credit, equity and commodity derivative contracts, AIs should calculate an entity-level / commodity type-level add-on for contracts within a hedging set that reference the same entity, index or commodity type by adding together the add-ons for individual contracts within the hedging set calculated based on the formulas described in [paragraph 19](#). The add-ons so calculated are then aggregated using a formula with a supervisory correlation factor<sup>16</sup> ( $\rho$ ) applied to determine the extent

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<sup>11</sup> Basel II Annex 4 Paras. 157 and 158 added by the BCBS SA-CCR Standards.

<sup>12</sup> Basel II Annex 4 Para. 164 added by the BCBS SA-CCR Standards.

<sup>13</sup> Basel II Annex 4 Para. 159 added by the BCBS SA-CCR Standards.

<sup>14</sup> Basel II Annex 4 Paras. 160, 183 and 184 added by the BCBS SA-CCR Standards.

<sup>15</sup> Basel II Annex 4 Paras. 166 – 171 added by the BCBS SA-CCR Standards.

<sup>16</sup> Basel II Annex 4 Paras. 165 and 183 added by the BCBS SA-CCR Standards.

of offsetting allowed across entity-level / commodity type-level add-ons<sup>17</sup> within the hedging set.

- 22 - The add-ons for hedging sets for an asset class obtained from the calculations described in [paragraph 20 or 21](#), as the case may be, are then aggregated via simple summation to arrive at the add-on for the asset class.

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<sup>17</sup> Basel II Annex 4 Paras. 172 – 180 added by the BCBS SA-CCR Standards.

### III MODIFIED CEM

#### 1 Scope of Application

23 An AI may use the modified CEM to measure its CCR exposure arising from derivative contracts if the following conditions are met:

- (i) the AI currently uses the BSC approach; and
- (ii) as at the end date of each of the 4 consecutive financial reporting periods (both interim and annual) immediately preceding the date on which the calculation of the CCR exposure is performed, the total notional amount of the AI's outstanding derivative contracts (regardless of whether the contracts are recorded as assets or liabilities) does not exceed 10% of the aggregate of its total assets and total liabilities reported in its financial statements. (If a BSC AI is required to calculate its capital adequacy ratio on a consolidated basis, the threshold will also be applied at the consolidation group level.) BSC AIs not meeting this condition must use the SA-CCR to measure their CCR exposure arising from derivative contracts<sup>18</sup>.

24 It is proposed that no prior approval by the MA should be needed in order for a BSC AI to use the modified CEM if the conditions above are met. However, the MA may, by notice in writing given to an AI, require the AI to use the SA-CCR to calculate its CCR exposure (notwithstanding that the conditions are met) if the MA considers that the use by the AI of the modified CEM would not adequately assess and reflect the AI's CCR exposure taking into account the nature of its business.

25 The MA proposes that BSC AIs using the modified CEM should report the respective notional amounts, total assets and total liabilities in their CAR return so as to facilitate both the MA's monitoring of their compliance with the quantitative threshold and the MA's determination of whether a notice of the nature described in [paragraph 24](#) is warranted.

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<sup>18</sup> The quantitative threshold has been calibrated based on data reported in the relevant AIs' financial statements for the period between June 2012 and December 2014.

## 2 Calculation of Credit Equivalent Amount

- 26 - In formulating the modified CEM, the MA has been guided by the principles that the modified CEM—
- (i) - should be simple and suitable for use by BSC AIs with a limited size of operation;
  - (ii) - should not be less stringent than the SA-CCR, particularly in respect of foreign exchange and interest rate contracts which are the major types of contract held by BSC AIs; and
  - (iii) - should provide incentives for BSC AIs to move to the SA-CCR.

- 27 - Under the modified CEM, it is proposed that the CEA of the CCR exposure in respect of a derivative contract will continue to be calculated as the sum of replacement cost (aka current exposure) and potential future exposure (aka potential exposure) as is the case with the current version of the CEM. However, the sum obtained will be multiplied by 1.4 in order to align with the formulation used in the SA-CCR, which is intended to compensate for lack of granularity and general wrong way risk. That is—

$$\text{CEA} = 1.4 * (\text{RC} + \text{PFE})$$

where—

- RC is the replacement cost, which carries the same meaning as the term “current exposure” currently defined in §2(1) of the BCR.
- PFE is the potential future exposure, which is calculated as the product of the notional amount of a derivative contract and its applicable CCF.

As in the existing CEM, margin agreements, if any, will not be recognized in the calculation of RC. However, it is proposed to clarify that if a BSC AI has posted collateral to a counterparty in relation to a derivative contract and the collateral is not held in a manner that is bankruptcy-remote from the counterparty, the posted collateral should be included in the RC. A similar requirement already exists for collateral posted for centrally cleared transactions (see BCR §226ZE).

- 28 - PFE will be calculated according to the method currently in use under the CEM, except that—
- (i) - the CCFs will be revised by drawing reference from the supervisory factors used in the SA-CCR in order to reflect volatilities observed in recent years and in periods of stress (please see subsection 3.3 for details); and
  - (ii) - there will not be any recognition of bilateral netting in the calculation of PFE as the capturing of netting benefits would require a more complex

formulation, which may not yield noticeable benefits because data collected from the CAR return suggests that no BSC AIs report their CCR exposures on a net basis.

29 Table 2 provides a high level comparison of the proposed modified CEM with the SA-CCR and the existing CEM.

	SA-CCR	Existing CEM	Proposed modified CEM
<b>General structure</b>	1.4 * (RC + PFE)	RC + PFE	1.4 * (RC + PFE)
<b>Recognition of margin agreements</b>	Yes	No	No
<b>Recognition of netting in RC</b>	Full recognition	Full recognition	Full recognition
<b>Recognition of netting in PFE</b>	Full or partial recognition inside hedging sets; No recognition across hedging sets	60% of netting is recognized	No
<b>Calibration</b>	Based on recent stress periods	Not updated to recent stress periods	Revised to align with the calibration of SA-CCR

Table 2

### 3 Modifications to Parameters

#### 3.1 Notional Amount

30 “Notional amount” is currently defined in the BCR as the reference amount used to calculate payment obligation between the parties to an off-balance sheet exposure. It is proposed to provide further elaboration in the case of exchange rate, equity and commodity contracts in order to align with the definition of “adjusted notional amount” under the SA-CCR<sup>19</sup>:

- (i) For exchange rate contracts, the notional amount is the foreign currency leg of the contract, converted to Hong Kong dollars. If both legs of an exchange rate contract are denominated in foreign currencies, the notional amount of

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<sup>19</sup> No amendment is needed for interest rate and credit contracts because the adjustment (i.e. supervisory duration) to the notional amount has been subsumed into the proposed CCFs set out in Table 3.

each leg is converted to Hong Kong dollars and the leg with the larger Hong Kong dollar value is taken as the notional amount of the contract.

- (ii) - For equity and commodity (including precious metal and electricity) contracts, the notional amount is the product of the current price of one unit of the stock or commodity (e.g. a share of equity or barrel of oil) and the number of units referenced by the contract.
- 31 - The required adjustments to the notional amount currently set out in BCR §119(a) and (b)(i), (ii) and (iii) will remain largely unchanged (subject to modifications where necessary to align with the corresponding requirements under the SA-CCR).

### **3.2 Residual Maturity**

- 32 - “Residual maturity” currently used in the CEM is not a defined term in the BCR and therefore is taken to have its ordinary meaning. The same term will continue to be used under the modified CEM. However, for an interest rate or credit contract that references the value of another interest rate or credit instrument (e.g. swaption or bond option), the residual maturity of the contract should be taken as the current time to maturity of the underlying interest rate or credit instrument (e.g. a European swaption with an exercise date in 6 months referencing a 5-year interest rate swap should be taken to have a residual maturity of 5.5 years instead of 0.5 year). The modification will ensure the consistency of the definition of “residual maturity” with the definition adopted in updating the existing CCFs against the supervisory factors under the SA-CCR.

### **3.3 CCFs**

- 33 - The existing CCFs set out in the BCR for credit derivative contracts and other derivative contracts were introduced by the BCBS in 2004 and 1995 respectively. In light of developments in the financial markets and market movements observed during the global financial crisis, the MA considers that, if the CEM is to be retained for small BSC AIs, the CCFs must be updated to better reflect recent volatilities in major risk factors.
- 34 - The MA has updated the CCFs based on the add-on formulas and the supervisory factors introduced by the SA-CCR and by applying conservative assumptions in respect of residual maturity<sup>20</sup> and delta<sup>21</sup> and assuming that derivative contracts

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<sup>20</sup> Residual maturities of 1 year, 5 years and 10 years are used respectively to calibrate the CCFs for the residual maturity buckets of  $\leq 1$  year,  $> 1$  year but  $\leq 5$  years, and  $> 5$  years.

are not covered by any margin or bilateral netting agreements (see explanations in paragraphs 27 and 28(ii)). The proposed CCFs are set out in Tables 3 and 4.

	Existing			Proposed		
Residual maturity	≤ 1 year	> 1 year but ≤ 5 years	> 5 years	≤ 1 year	> 1 year but ≤ 5 years	> 5 years
<b>Interest rate</b>	0%	0.5%	1.5%	0.5%	2%	4%
<b>Credit</b>						
<i>Single name (rated BBB- or above) or Index (investment grade)</i>	5%	5%	5%	0.5%	2.5%	4.5%
<i>Single name (rated BB+ to B-) or index (non-investment grade)</i>	10%	10%	10%	1.5%	7.0%	12.5%
<i>Single name (rated CCC+ to CCC-)</i>	10%	10%	10%	6.0%	26.5%	47.0%
<b>Debt security</b>	10%	12%	15%	See Note 1		

Table 3

**Note 1:** A debt security contract should be classified as either an “interest rate” or “credit” contract based on the primary risk driver of the contract and assigned the appropriate proposed CCFs as shown in Table 3 accordingly.

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<sup>21</sup> Delta is assumed to be +1 taking into consideration that (a) BSC AIs rarely have positions in option contracts; and (b) short positions in primary risk factors (i.e. delta is -1) will not be included in the PFE calculation because it is proposed not to take into account bilateral netting under the modified CEM.



	Existing			Proposed
	$\leq$ 1 year	> 1 year but $\leq$ 5 years	> 5 years	All maturities
<b>Residual maturity</b>	$\leq$ 1 year	> 1 year but $\leq$ 5 years	> 5 years	All maturities
<b>Exchange rate</b>	1%	5%	7.5%	4%
<b>Equity</b>				
<i>Single name</i>	6%	8%	10%	32%
<i>Index</i>	6%	8%	10%	20%
<b>Precious metal</b>	7%	7%	8%	18%
<b>Electricity</b>	10%	12%	15%	40%
<b>Other commodity</b>	10%	12%	15%	18%

Table 4

- 35 Although the updated CCFs for equity and commodity contracts and credit derivative contracts with CCC-rated reference entities increase substantially (which increases are within expectation as the supervisory factors under the SA-CCR have taken into consideration volatilities during periods of stress), the updated CCFs for the major types of contract held by BSC AIs (i.e. exchange rate and interest rate contracts) only increase mildly. Hence, the MA believes that the proposed revisions to the CCFs should not have significant impacts on the capital positions of those BSC AIs that are eligible to use the modified CEM as they should have minimal derivative activities.

## IV CCR FRAMEWORK FOR TRANSACTIONS WITH CCPS

- 36 - The MA proposes to adopt the BCBS CCP Standards. The existing standards prescribed in BCR Part 6A Division 4 were recognized as interim standards when they were put in place, pending finalization of the BCBS CCP Standards.
- 37 - Many requirements under the interim standards will be retained (including the definitions, scope of application, treatment of CCR exposures to QCCPs and the capital requirements for bank exposures to non-QCCPs). The BCBS CCP Standards have however introduced significant amendments to the methodology for determining the capital requirements for default fund contributions in order to address the shortcomings of the CEM-based interim standards which are prone to significantly over- or under-estimating capital charges for default fund contributions to some QCCPs, potentially disincentivising QCCPs from maintaining generous default funds. The key new requirements and amendments introduced by the BCBS CCP Standards are discussed below in more detail.

### 1 Capital Charges for Default Fund Exposures to QCCPs

- 38 - Under the existing interim standards, AIs are allowed to choose one of two methods to calculate the capital charge for their default fund contributions made to a QCCP. These two methods will be replaced by a new and simpler method introduced by the BCBS CCP Standards which involves two major steps in terms of capital charge calculation:
- (i) - Calculation of the hypothetical capital requirement ( $K_{ccp}$ ) of the QCCP in respect of its CCR exposure to its clearing members; and
  - (ii) - Calculation of the capital requirement for an AI's default fund contributions made to the QCCP based on the QCCP's  $K_{ccp}$ .
- 39 - In Step (i),  $K_{ccp}$  is calculated as follows:

$$K_{ccp} = \sum_{CM_i} EAD_i \cdot RW \cdot 8\%$$

where—

- $EAD_i$  is the amount of the QCCP's exposure to clearing member "i" ( $CM_i$ ); and

- RW is 20% (which may be increased by national supervisors if appropriate).
- 40 - In Step (ii), an AI is required to calculate the capital requirement for its default fund contributions ( $K_{AI}$ ) using the following formula:

$$K_{AI} = \max\left(K_{CCP} \cdot \left(\frac{DF_{AI}^{pref}}{DF_{CCP} + DF_{CM}^{pref}}\right); 8\% \cdot 2\% \cdot DF_{AI}^{pref}\right)$$

where—

- $DF_{CM}^{pref}$  is the total prefunded default fund contributions from all clearing members of the QCCP;
- $DF_{CCP}$  is the QCCP's prefunded own resources (e.g. contributed capital, retained earnings, etc.) contributed to the default waterfall, where these resources are junior or pari passu to prefunded default fund contributions from clearing members; and
- $DF_{AI}^{pref}$  is the prefunded default fund contributions provided by the AI.

Detailed rules for calculating  $EAD_i$  and  $K_{AI}$  are set out in Basel II Annex 4 Paras. 205 to 207 (added by the BCBS CCP Standards).

- 41 - Recognizing that in practice AIs are unlikely to have access to the data necessary for the calculation of  $K_{CCP}$ , there will not be any provisions in the BCR prescribing the detailed  $K_{CCP}$  calculation requirements. Clearing member AIs will rely on a CCP to provide enough data for them to calculate their  $K_{AI}$  in accordance with the requirements set out in the BCR. Where a CCP is unable to do so, it should be regarded as a non-QCCP for capital adequacy purposes.

## 2 CCR Exposures to CCPs

### 2.1 Calculation of CCR Exposures

- 42 - Currently, the amount of CCR exposure to a CCP is calculated using the CEM or the IMM(CCR) approach. When the SA-CCR comes into force, AIs not having the supervisory approval for using the IMM(CCR) approach must use the SA-CCR to calculate their CCR exposures to CCPs<sup>22</sup>. However, the MA proposes that BSC AIs

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<sup>22</sup> Basel II Annex 4 Para. 193 (i.e. Para. 111 of the interim standards) as revised by the BCBS CCP Standards.

that are eligible for using the modified CEM (see [Section III](#)) be permitted to use the modified CEM instead of the SA-CCR for this purpose.

- 43 The requirements related to MPOR that are currently applicable to CCR exposure calculations under the IMM(CCR) approach will be extended to CCR exposure calculations under the SA-CCR. Moreover, the BCBS CCP Standards introduced a new requirement that if an AI using the SA-CCR or the IMM(CCR) approach has posted variation margin for its trades with a CCP and the margin is held by the CCP in a manner that is not bankruptcy-remote, the AI must use a minimum risk horizon which is the lesser of one year and the remaining maturity of the trade concerned, subject to a floor of 10 business days<sup>23</sup>.
- 44 Under the interim standards, AIs using the IMM(CCR) approach may apply a MPOR of at least five days to cleared client transactions and AIs using the CEM may multiply the CCR exposure amount of these transactions by a scalar of no less than 0.71 (see BCR §226Z(3) and (4)). The minimum 5-day MPOR for the IMM(CCR) approach will remain unchanged and will also be applicable to the SA-CCR after implementation of the BCBS CCP Standards<sup>24</sup>. For BSC AIs eligible to use the modified CEM, the MA proposes to remove the scalar set out in BCR §226(4) in order not to increase the complexity of the framework. Since these AIs' derivative activities should be minimal, the MA believes that the proposal will not have any material impact on them.

## **2.2 Multi-level Client Structure**

- 45 The BCBS CCP Standards include provisions that clarify the treatment for multi-level client structures<sup>25</sup>. In a multi-level client structure, indirect clearing services are provided by an institution which is a client of a clearing member or a client of another client. Figure 1 shows an example of a multi-level client structure.

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<sup>23</sup> Basel II Annex 4 Para. 193 (i.e. Para. 111 of the interim standards) as revised by the BCBS CCP Standards.

<sup>24</sup> Basel II Annex 4 Para. 195 (i.e. Para. 113 of the interim standards) as revised by the BCBS CCP Standards.

<sup>25</sup> See Basel II Annex 4 Paras. 6(ii) and 197 (i.e. Para. 114 of the interim standards) as revised, and Para. 196 and the definition of "multi-level client structure" added to Basel II Annex 4, by the BCBS CCP Standards.

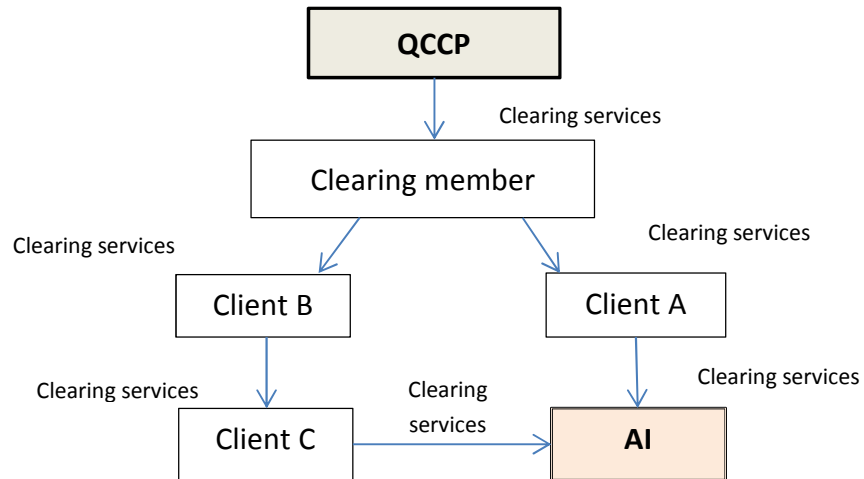


Figure 1

In Figure 1, Client A, Client B and Client C are referred to as a “higher level client” while the AI is referred to as a “lower level client”.

- 46 - Currently, Client A and Client B can look through the Clearing member and treat their exposures to the Clearing member as exposures to the QCCP for risk-weighting purposes if certain conditions regarding portability of trades and segregation of accounts are fulfilled. The BCBS CCP Standards allow this look-through treatment to be applicable to the lower level client’s exposures to higher level clients (i.e. the AI’s exposures to Client A and Client C) in a multi-level client structure provided that the same conditions regarding portability and segregation are fulfilled between clients at each client level and between the clearing member and its clients.

### 3 Cap on Total Capital Charge for Exposures to a QCCP<sup>26</sup>

- 47 - If an AI’s total capital charge for its exposures to a QCCP is higher than the total capital charge that would be applied to those same exposures if the CCP were a non-QCCP, the latter total capital charge will be applied.

<sup>26</sup> Basel II Annex 4 Para. 209 added by the BCBS CCP Standards.

## V EQUITY INVESTMENTS IN FUNDS

- 48 - As part of the Financial Stability Board’s programme to strengthen the oversight and regulation of shadow banking, the BCBS reviewed the capital requirements for banks’ exposures arising from their investments in funds in order to achieve a more internationally consistent and risk-sensitive capital treatment for such exposures, reflecting both the risk of the underlying investment and the leverage of the fund. The new framework is set out in the BCBS Funds Standards.

### 1 Scope of Application

- 49 - The MA proposes that all locally incorporated AIs should apply the new framework for the determination of capital requirements for the following exposures booked in their banking book<sup>27</sup> (referred to as CIS exposures in this Section):
- (i) - holding of units or shares in funds; and
  - (ii) - off-balance sheet exposures associated with investments in units or shares in funds, such as unfunded commitments to subscribe to a fund’s future capital calls.
- 50 - The BCBS Funds Standards provide that national supervisors may exercise discretion to exempt exposures arising from equity investments in funds that meet the conditions in paragraphs 356 and 357 of Basel II from the new framework. In short, the following exposures might be exempted:
- (i) - equity holdings in entities whose debt obligations are eligible for 0% RW if the Basel II standardised approach for credit risk is used to determine the RW of the debt obligations<sup>28</sup>; and
  - (ii) - equity holdings made under legislated programmes that provide significant subsidies for the investment to the investing bank and involve some form of government oversight and restrictions on the equity investments (the exempted amount is subject to a cap equal to 10% of a bank’s total regulatory capital)<sup>29</sup>.

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<sup>27</sup> See the first paragraph of Section A “Scope of application” of the BCBS Funds Standards.

<sup>28</sup> Para. 356 of Basel II and Para. 80(xi) added to Basel II by the BCBS Funds Standards.

<sup>29</sup> Para. 357 of Basel II and Para. 80(xii) added to Basel II by the BCBS Funds Standards.

The MA proposes not to exercise the above discretion in order to be consistent with the existing treatment for equity exposures under the IRB approach which also does not provide for the exemptions set out in paragraphs 356 and 357 of Basel II. The proposal is not expected to have a noticeable impact on AIs' capital positions because only highly rated sovereigns (including public sector entities that are regarded as sovereigns by the relevant banking supervisory authorities), relevant international organizations specified in BCR Schedule 1 Part 10 and multilateral development banks specified in the Banking (Specification of Multilateral Development Bank) Notice (Cap. 155N) will be eligible for 0% RW under the STC approach. It does not seem likely that AIs will have significant equity holdings in this type of body. Moreover, locally there is no legislated programme that meets the conditions set out in Para. 357 of Basel II.

- 51 - The new framework is not applicable to any direct, indirect or synthetic investments in financial sector entities held by AIs that are required to be deducted under Division 4 of Part 3 of the BCR. See the Annex for a numerical example of the MA's preliminary thoughts on how this requirement should operate when calculating the RWA of an AI's investment in a fund<sup>30</sup>.

## 2 Hierarchy of Approaches to Risk-weighting CIS Exposures

### 2.1 Three Calculation Approaches

- 52 - The framework comprises a hierarchy<sup>31</sup> of three approaches for determining the RWs applicable to CIS exposures:
- (i) - The *look-through approach* (LTA) must be used when—
    - there is sufficient and frequent information provided to the AI regarding the underlying exposures of a fund; and
    - such information is verified by an independent third party.
  - (ii) - The *mandate-based approach* (MBA) may be used when the conditions for using the LTA are not met.
  - (iii) - AIs should use the *fall-back approach* (FBA) when neither of the above approaches is feasible.

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<sup>30</sup> See the last paragraph of Section A "Scope of application" of the BCBS Funds Standards.

<sup>31</sup> See Section B "Hierarchy of approaches" of the BCBS Funds Standards.

53 Recognizing that BSC AIs may find it too difficult or uneconomical to apply the LTA or MBA, the MA proposes that these AIs may use the FBA to risk-weight their CIS exposures without being required to demonstrate that the use of both the LTA and MBA is infeasible.

54 An AI may use a combination of the three approaches when determining the capital requirements for its CIS exposures in respect of a fund<sup>32</sup>. Combined use of the approaches may be needed, for example, when there is sufficient information to use the LTA to risk-weight the on-balance sheet exposures of a fund but only the MBA is feasible for the fund's off-balance sheet exposures.

## 2.2 LTA

55 Under the LTA, an AI must risk-weight all underlying exposures of a fund as if those exposures were directly held by the AI.

56 If an underlying exposure of a fund in which an AI has invested is a capital investment in a commercial entity that would fall within §43(1)(n) of the BCR if the capital investment were held by the AI and the net book value of the AI's share in such capital investment exceeds 15% of its capital base as reported in its capital adequacy ratio return as at the immediately preceding calendar quarter end date, the MA proposes that the AI should risk-weight the underlying exposure by—

- (i) assigning a risk-weight of 1250% to that amount of the net book value of its share that exceeds that 15%; and
- (ii) assigning to the rest of the capital investment (including that belonging to the other investors) a risk-weight determined in accordance with the existing BCR section that applies to equity exposures (e.g. §66).

57 The AI may rely on third-party calculations for determining the RWs applicable to the underlying exposures if the AI does not have adequate data or information to perform the calculations itself. However, a factor of 1.2 should be applied to the RWs determined by third parties. For instance, any exposure that is subject to a 20% RW under the Basel II standardised approach for credit risk would be risk-weighted at 24% (1.2 \* 20%) when the look-through is performed by a third party. If the AI is an IRB AI, the third party must determine the RWs applicable to the underlying exposures of a fund by using—

- (i) the Basel II standardised approach for credit risk for non-securitization exposures other than equity exposures;

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<sup>32</sup> Para. 80(x) added to Basel II by the BCBS Funds Standards.



- (ii) - the Basel II simple risk-weight method for equity exposures; and
- (iii) - the Basel II ratings-based method (as modified by Basel 2.5) for securitization exposures.

58 - The detailed LTA requirements are set out in Paras. 80(ii) to 80(v) added to Basel II by the BCBS Funds Standards.

### **2.3 MBA**

59 - An AI may use the information contained in a fund's mandate or in the national regulations governing the fund, or the information drawn from other disclosures of the fund, to determine (subject to certain conservative assumptions<sup>33</sup>) the fund's underlying exposures and the RWA of the AI's CIS exposure to the fund.

60 - The detailed MBA requirements are set out in Paras. 80(vi) to 80(vii) added to Basel II by the BCBS Funds Standards.

### **2.4 FBA**

61 - Under the FBA, an AI is required to apply a 1,250% RW to its CIS exposures<sup>34</sup>.

### **2.5 Underlying Exposures of a Fund<sup>35</sup>**

62 - For the purposes of the LTA and MBA, the underlying exposures of a fund means—

- (i) - any asset held by the fund such as cash, debt securities, funds, shares and variation margin receivable;
- (ii) - default risk exposures arising from derivative contracts and SFTs entered into by the fund;
- (iii) - credit risk exposures, if any, to the underlying risk factors of derivative contracts (e.g. equity exposures assumed by a synthetic index fund through holding equity derivatives or direct credit substitutes arising from the selling of credit protection in the form of credit default swaps), or to the underlying assets of SFTs, entered into by the fund, where such underlying risk factors or assets would be subject to capital charges under the BCR if the fund were an AI; and
- (iv) - other off-balance sheet exposures (e.g. guarantees) incurred by the fund that would be subject to capital charges under the BCR if the fund were an AI.

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<sup>33</sup> See Para. 80(vii) added to Basel II by the BCBS Funds Standards.

<sup>34</sup> Para. 80(viii) added to Basel II by the BCBS Funds Standards.

<sup>35</sup> Para. 80(iv) added to Basel II by the BCBS Funds Standards.

63 - Instead of determining the CVA capital charges for the derivative contracts entered into by a fund in accordance with BCR Part 6A Division 3, the CVA capital charges should be embedded in the RWA calculated for the derivative contracts through multiplying the default risk exposure of the contracts by a factor of 1.5 before the RW applicable to the counterparty concerned is applied.<sup>36</sup>

## 2.6 Calculation of the RWA of an AI's CIS Exposures

64 - Under the LTA and the MBA, the RWA of an AI's CIS exposures (denoted in this paper as "RWA<sub>investment</sub>") is calculated by the following formula<sup>37</sup>:

$$RWA_{investment} = \text{Average } RW_{fund} * \text{Leverage}_{fund} * \text{AI's equity investment}$$

where—

- Average  $RW_{fund}$  is the average RW of the fund's underlying exposures calculated by dividing the total RWA of the fund determined under the LTA or MBA by the total assets of the fund;
- $Leverage_{fund}$  is the ratio of the fund's total assets to its total equity (in the case of MBA, the maximum financial leverage permitted in the fund's mandate or in the national regulation governing the fund should be used). Para. 80(xiii) of Basel II (added by the BCBS Funds Standards) states that national discretion may be applied to choose a more conservative leverage metric, if deemed appropriate. The MA does not propose to exercise this discretion as there is currently no evidence that the said leverage metric is inappropriate; and
- the product of Average  $RW_{fund}$  and  $Leverage_{fund}$  is capped at 1,250%.

65 - Under the FBA, the RWA<sub>investment</sub> is the product of an AI's equity investment in a fund and 1,250%.

## 3 Specific Requirements under the IRB Approach

66 - IRB AIs must use the LTA, MBA or FBA (depending on the extent of information on the underlying exposures of a fund available to them) to determine the RWs applicable to their CIS exposures. In other words, the market-based approach (i.e. the simple risk-weight method and internal models method) and the PD/LGD approach for equity exposures under Division 7 of Part 6 of the BCR will no longer be applicable to CIS exposures after the BCBS Funds Standards are implemented.

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<sup>36</sup> Paras. 80(iv) and 80(vii)(c) added to Basel II by the BCBS Funds Standards.

<sup>37</sup> Paras. 80(xiii) – 80(xvi) added to Basel II by the BCBS Funds Standards

67 The requirements outlined in [subsection 2](#) are subject to the following modifications when they are applied under the IRB approach<sup>38</sup>:

- (i) - Under the LTA, IRB AIs must risk-weight a fund's underlying exposures using the IRB approach and the IRB(S) approach as if those exposures were held directly by the AIs. Hence, IRB AIs will need to calculate the IRB risk components (i.e. PD of the underlying exposures and, where applicable, LGD and EAD), or determine the appropriate supervisory or other parameters, associated with the fund's underlying exposures. IRB AIs must use the STC approach to determine the RWs applicable to the underlying exposures of funds if the underlying exposures, if held by the IRB AIs directly, would be exempted from IRB calculation under the approval granted by the MA under BCR §12. When an IRB AI finds that an IRB calculation under the IRB approach or the use of the supervisory formula method under the IRB(S) approach (if the AI has the supervisory approval to use this method) is not feasible (e.g. an AI cannot assign the necessary risk components to the underlying exposures in a manner consistent with its own underwriting criteria), the AI must determine the RWs applicable to the underlying exposures concerned by using—
- the STC approach for non-securitization exposures other than equity exposures;
  - the simple risk-weight method set out in BCR §185, the treatments set out in [paragraph 56](#)<sup>39</sup> or §183(7)<sup>40</sup>, as the case requires, for equity exposures; and
  - the ratings-based method set out in BCR Part 7 Division 5 for securitization exposures.

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<sup>38</sup> Paras. 361(i) and 361(ii) added to Basel II by the BCBS Funds Standards.

<sup>39</sup> Under the latest BCBS capital standards currently in force, all significant capital investments in commercial entities exceeding certain thresholds should be risk-weighted at 1250%. BCR §43(1)(n), which requires deduction from an AI's common equity tier I capital of significant capital investments in commercial entities which are connected companies of the AI, is a local requirement that goes beyond the BCBS capital standards. As the BCBS Funds Standards do not have a deduction treatment for this type of significant capital investment, the HKMA proposes that, for the purposes of the LTA and MBA, AIs should follow the BCBS requirement, i.e. for a significant capital investment in a commercial entity, the amount that exceeds 15% of an AI's capital base should be risk-weighted at 1250% regardless of the requirement of §43(1)(n).

<sup>40</sup> The BCBS Funds Standards only require equity exposures to be risk-weighted using the simple risk-weight method. The HKMA's proposed additional requirements to risk-weight certain capital investments in commercial entities at 1250% and to risk-weight certain capital instruments issued by financial sector entities at 250% reflect the current risk weighting treatments of an AI's investments in such entities under §66(2)(b), §68A, §116(2)(b), §117A and §183(6) and (7) of the BCR.

- (ii) - Under the MBA, IRB AIs must determine the RWs applicable to the underlying exposures of a fund by using—
- the STC approach for non-securitization exposures other than equity exposures;
  - the simple risk-weight method set out in BCR §185, the treatments set out in [paragraph 56](#) or §183(7), as the case requires, for equity exposures; and
  - the ratings-based method set out in BCR Part 7 Division 5 for securitization exposures.

## VI IMPLEMENTATION TIMELINE

68 - The MA proposes to bring into force the new requirements described in this consultation paper on 1 January 2017, in line with the internationally agreed timetable.

	Legislative changes	Regulatory reporting
<b>H1 2016</b>	Preliminary consultation on key proposed amendments to the BCR	
<b>Q3 2016</b>	Statutory consultation on draft amendments to the BCR	Industry consultation on draft revised CAR return and completion instructions
<b>By mid-Oct 2016</b>	<ul style="list-style-type: none"> <li>◆ Finalize revised rules taking into account industry comments</li> <li>◆ Gazette revised rules and table the rules at the Legislative Council for negative vetting</li> </ul>	
<b>1 Jan 2017</b>	Revised BCR come into effect	-
<b>By 31 Mar 2017</b>	-	Launch revised CAR return and completion instructions

Table 5 -

## VII GLOSSARY

AI	Authorized institution
Basel II	<i>International Convergence of Capital Measurement and Capital Standards: A Revised Framework (Comprehensive Version)</i> , Basel Committee on Banking Supervision, June 2006, including any subsequent amendments made by the BCBS that are currently in force.
Basel 2.5	<i>Enhancements to the Basel II framework</i> , Basel Committee on Banking Supervision, July 2009
Basel II ratings-based method	The method set out in paragraphs 611 to 618 of Basel II, including any subsequent amendments made by the BCBS that are currently in force.
Basel II simple risk-weight method	The method set out in paragraphs 344 and 345 of Basel II, including any subsequent amendments made by the BCBS that are currently in force.
Basel II standardised approach for credit risk	The approach set out in paragraphs 50 to 210 of Basel II, including any subsequent amendments made by the BCBS that are currently in force.
BCR	Banking (Capital) Rules
BSC AI	AI which currently uses the BSC approach for calculating their capital requirements for credit risk
BSC approach	Basic approach to credit risk (Part 5 of the BCR)
CAR return	Return on capital adequacy ratio (MA(BS)3)
CCF	Credit conversion factor, which is a percentage by which the notional amount of a derivative contract is multiplied as a part of the process for determining the CEA of the contract under the CEM
CEA	Credit equivalent amount, which is a measure of the CCR exposure in respect of a derivative contract under the CEM
CEM	Current exposure method, which is a method of measuring CCR exposures in respect of derivative contracts set out in Basel II Annex 4.
CIS	Collective investment scheme, as defined in BCR §2(1)

CVA	Credit valuation adjustment, as defined in BCR §2(1)
EAD	Exposure at default
IMM(CCR) approach	Internal models (counterparty credit risk) approach (Division 2 of Part 6A of the BCR)
IRB AI	AI which currently uses the IRB approach for calculating their capital requirements for credit risk
IRB approach	Internal ratings-based approach to credit risk (Part 6 of the BCR)
IRB(S) approach	Internal ratings-based (securitization) approach (Divisions 4, 5 and 6 of Part 7 of the BCR)
LGD	Loss given default
MA	Monetary Authority
MPOR	Margin period of risk, as defined in BCR §226A
Netting set	A portfolio of transactions that is covered by a margin agreement, or a transaction that is not covered by a margin agreement
Non-QCCP	A CCP that is not a qualifying CCP
PD	Probability of default
QCCP	Qualifying CCP, as defined in BCR §226V(1)
SFTs	Securities financing transactions, as defined in BCR §2(1)
STC approach	Standardized (credit risk) approach (Part 4 of the BCR)
RW	Risk-weight
RWA	Risk-weighted amount

# VIII ANNEX

(The following is an example solely for the purpose of illustrating the MA’s current thinking on the calculation of the RWA of an AI’s equity investment in a fund which has invested in capital instruments or equities issued by financial sector entities or commercial entities. The example deliberately incorporates certain assumptions for the sake of simplicity and ease of illustration. When determining the amount of capital deduction and the amount subject to risk-weighting in an actual case, AIs should always refer to and follow the relevant provisions set out in the BCR.)

Consider a fund that has the following balance sheet: -

<b>Asset</b>	
Cash	\$20
CET1 capital instruments (AA- to AAA) issued by	
— financial sector entity A	\$100
— financial sector entity B	\$100
Debt securities (A rated) issued by sovereigns	\$280
Listed equities issued by	
— Commercial entity A	\$100
— Other commercial entities	\$400
<b>Liabilities</b>	
Note payable	\$50
<b>Equity</b>	
Shares	\$950

Moreover, assume the following:

- ◆ An AI using the STC approach owns 20% of the shares of the fund and the principal amount of the AI’s equity investment in the fund is \$190.
- ◆ Financial sector entities A and B and commercial entity A have the following relationship with the AI:
  - The AI owns less than 10% of the issued ordinary share capital of financial sector



entity A and owns more than 10% of the issued ordinary share capital of financial sector entity B. Both financial sector entities are not subject to a section 3C requirement and they are not affiliates of the AI.

- Commercial entity A is an affiliate of the AI.
- ◆ None of the listed equities held by the fund are required to be deducted from the AI's CET1 capital under BCR §43. Moreover, the other commercial entities are not the affiliates of the AI and the AI does not have any share holdings in them.
- ◆ The AI does not have any items that are required to be deducted from its capital under BCR Part 3 Division 4 except (i) its indirect holdings of CET1 capital instruments issued by financial sector entities A and B through its equity investment in the fund and (ii) its holdings of the ordinary share capital of the two financial sector entities.
- ◆ The AI has chosen not to apply the transitional arrangements set out in BCR Schedule 4H.

Under the LTA, the RWAs of the assets held by the fund would be calculated as follows:

	<b>Principal amount adjusted for amount subject to capital deduction</b>	<b>Risk-weight</b>	<b>RWA</b>
Cash (BCR §63)	\$20	0%	\$0
CET1 capital instruments issued by			
— financial sector entity A			
Share of the AI not exceeding 10% of CET1 capital (BCR §43(1)(o), §66 and Schedule 4F)	\$4 <sup>41</sup>	100%	\$4
Shares of other CIS unit holders (BCR §59)	\$80	20%	\$16
— financial sector entity B			
Share of the AI not exceeding 10% of CET1	\$2 <sup>42</sup>	250%	\$5

<sup>41</sup> Assuming that after applying all the relevant provisions in the BCR, the AI determines that the amount of deduction from its CET1 capital should be \$16. Such amount is therefore excluded from the above RWA calculations.

<sup>42</sup> Assuming that after applying all the relevant provisions in the BCR, the AI determines that the amount of deduction from its CET1 capital should be \$18. Such amount is therefore excluded from the above RWA calculations.

capital (BCR §43(1)(p), §66 and Schedule 4G)			
Shares of other CIS unit holders (BCR §59)	\$80	20%	\$16
Debt securities (A rated) issued by sovereigns (BCR §55)	\$280	20%	\$56
Listed equities			
— Commercial entity A			
Share of the AI exceeding 15% of capital base (BCR §68A)	\$5 <sup>43</sup>	1250%	\$62.5
Share of the AI not exceeding 15% of capital base (BCR §66)	\$15	100%	\$15
Shares of other CIS unit holders (BCR §66)	\$80	100%	\$80
— Other commercial entities (BCR §66)	\$400	100%	\$400

$$\text{Average } RW_{fund} = \frac{0 + 4 + 16 + 5 + 16 + 56 + 62.5 + 15 + 80 + 400}{20 + (100 - 16) + (100 - 18) + 280 + 100 + 400}$$

$$= \frac{654.5}{966}$$

$$= 0.6775 \text{ (Note 1) -}$$

$$\text{Leverage}_{fund} = 1000 / 950 = 1.05 -$$

$$\text{AI's equity investment} = 190 - 34 = 156 \text{ (Note 2) -}$$

$$\text{RWA}_{investment} = 0.6775 * 1.05 * 156 = 110.98 -$$

**Note 1:**

The total assets and total RWA of the fund are calculated with the amount subject to deduction from the AI's CET1 capital (i.e. \$34 of the AI's indirect holding of the CET1 capital instruments) excluded from the calculations.

**Note 2:**

As \$34 of the AI's equity investment in the fund has to be deducted from the AI's CET1 capital, the amount of the AI's equity investment that should be risk-weighted should be \$156 instead of \$190 in order to avoid double charging for the same exposure.

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<sup>43</sup> Assuming that the AI's capital base reported in its capital adequacy ratio return as at the immediately preceding calendar quarter end date is \$100, the 15% threshold is therefore \$15.