



MODULE	CA: Capital Adequacy
CHAPTER	CA-5 Market Risk

## CA-5.1 Trading Book

### *Definition of the Trading Book*

CA-5.1.1 The following definition of the trading book replaces the previous definition.

#### CA-5.1.2

A trading book consists of positions in financial instruments and commodities held either with trading intent or in order to hedge other elements of the trading book. To be eligible for trading book capital treatment, financial instruments must either be free of any restrictive covenants on their tradability or able to be hedged completely. In addition, positions should be frequently and accurately valued, and the portfolio should be actively managed (at the present time, open equity stakes in hedge funds, private equity investments and real estate holdings do not meet the definition of the trading book, owing to significant constraints on the ability of banks to liquidate these positions and value them reliably on a daily basis. Such holdings must therefore be held in the bank's banking book and treated as equity holding in corporates, except real estate which should be treated as per Paragraph CA-4.2.27).

#### CA-5.1.3

A financial instrument is any contract that gives rise to both a financial asset of one entity and a financial liability or equity instrument of another entity. Financial instruments include both primary financial instruments (or cash instruments) and forward financial instruments. A financial asset is any asset that is cash, the right to receive cash or another financial asset; or the contractual right to exchange financial assets on potentially favourable terms, or an equity instrument. A financial liability is the contractual obligation to deliver cash or another financial asset or to exchange financial liabilities under conditions that are potentially unfavourable.

#### CA-5.1.4

Positions held with trading intent are those held intentionally for short-term resale and/or with the intent of hedging proprietary or client positions.

#### CA-5.1.5

Banks must have clearly defined policies and procedures for determining which exposures to include in, and to exclude from, the trading book for purposes of calculating their regulatory capital, to ensure compliance with the criteria for trading book set forth in this section and taking into account the bank's risk management capabilities and practices. Compliance with these policies and procedures must be fully documented and subject to periodic internal audit.



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### CA-5.1.6

These policies and procedures should, at a minimum, address the following general considerations:

- (a) The activities the bank considers to be trading and as constituting part of the trading book for regulatory capital purposes;
- (b) The extent to which an exposure can be marked-to-market daily by reference to an active, liquid two-way market;
- (c) For exposures that are marked-to-model, the extent to which the bank can:
  - Identify the material risks of the exposure;
  - Hedge (Sharia compliant hedging) the material risks of the exposure and the extent to which hedging instruments would have an active, liquid two-way market;
  - Derive reliable estimates for the key assumptions and parameters used in the model.
- (d) The extent to which the bank can and is required to generate valuations for the exposure that can be validated externally in a consistent manner;
- (e) The extent to which legal restrictions or other operational requirements would impede the bank's ability to effect an immediate liquidation of the exposure;
- (f) The extent to which the bank is required to, and can, actively risk manage the exposure within its trading operations; and
- (g) The extent to which the bank may transfer risk or exposures between the banking and the trading books and criteria for such transfers.

The list above is not intended to provide a series of tests that a product or group of related products must pass to be eligible for inclusion in the trading book. Rather, the list provides a minimum set of key points that must be addressed by the policies and procedures for overall management of a firm's trading book.

### CA-5.1.7

The following will be the basic requirements for positions eligible to receive trading book capital treatment.

- (a) Clearly documented trading strategy for the position/instrument or portfolios, approved by senior management (which would include expected holding horizon).



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- (b) Clearly defined policies and procedures for the active management of the position, which must include:
- Positions are managed on a trading desk;
  - Position limits are set and monitored for appropriateness;
  - Dealers have the autonomy to enter into/manage the position within agreed limits and according to the agreed strategy;
  - Positions are marked to market at least daily and when marking to model the parameters must be assessed on a daily basis;
  - Positions are reported to senior management as an integral part of the institution's risk management process; and
  - Positions are actively monitored with reference to market information sources (assessment should be made of the market liquidity or the ability to hedge positions or the portfolio risk profiles). This would include assessing the quality and availability of market inputs to the valuation process, level of market turnover, sizes of positions traded in the market, etc.
- (c) Clearly defined policy and procedures to monitor the positions against the bank's trading strategy including the monitoring of turnover and stale positions in the bank's trading book.

#### *Prudent Valuation Guidance*

CA-5.1.8 This section provides banks with guidance on prudent valuation for positions in the trading book. This guidance is especially important for less liquid positions which, although they will not be excluded from the trading book solely on grounds of lesser liquidity, raise CBB's concerns about prudent valuation.

#### CA-5.1.8.A

Positions in the bank's own eligible regulatory capital instruments are deducted from capital. Positions in other banks', securities firms', and other financial entities' eligible regulatory capital instruments, as well as intangible assets, are subject to the same treatment as that set down by the CBB for such assets held in the banking book (see Module PCD).



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### *Prudent Valuation Guidance*

CA-5.1.9 This section provides banks with guidance on prudent valuation for positions that are accounted for at fair value, whether they are in the trading book or in the banking book. This guidance is especially important for positions without actual market prices or observable inputs to valuation, as well as less liquid positions which, although they will not be excluded from the trading book solely on grounds of lesser liquidity, raise supervisory concerns about prudent valuation. The valuation guidance set forth below is not intended to require banks to change valuation procedures for financial reporting purposes. The CBB will assess a bank's valuation procedures for consistency with this guidance. One factor in the CBB's assessment of whether a bank must take a valuation adjustment for regulatory purposes under Paragraphs CA-5.1.18.A to CA-5.1.20 is the degree of consistency between the bank's valuation procedures and these guidelines.

CA-5.1.9A A framework for prudent valuation practices should at a minimum include the following:

### *Systems and Controls*

#### CA-5.1.10

Banks must establish and maintain adequate systems and controls sufficient to give management and CBB the confidence that their valuation estimates are prudent and reliable. These systems must be integrated with other risk management systems within the organisation (such as credit analysis). Such systems must include:

- (a) Documented policies and procedures for the process of valuation. This includes clearly defined responsibilities of the various areas involved in the determination of the valuation, sources of market information and review of their appropriateness, guidelines for the use of unobservable inputs reflecting the bank's assumptions of what market participants would use in pricing position, frequency of independent valuation, timing of closing prices, procedures for adjusting valuations, end of the month and ad-hoc verification procedures; and
- (b) Clear and independent (i.e. independent of front office) reporting lines for the department accountable for the valuation process. The reporting line should ultimately be to a main board executive director.



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### *Valuation Methodologies*

#### *Marking to Market*

CA-5.1.11 Marking-to-market is at least the daily valuation of positions at readily available close out prices that are sourced independently. Examples of readily available close out prices include exchange prices, screen prices, or quotes from several independent reputable brokers.

#### CA-5.1.12

**Banks must mark-to-market as much as possible. The more prudent side of bid/offer must be used unless the institution is a significant market maker in a particular position type and it can close out at mid-market. Banks should maximise the use of relevant observable inputs and minimise the use of unobservable inputs when estimating fair value using a valuation technique. However, observable inputs or transactions may not be relevant, such as in a forced liquidation or distressed sale, or transactions may not be observable, such as when markets are inactive. In such cases, the observable data should be considered, but may not be determinative.**

#### *Marking to Model*

#### CA-5.1.13

**Only where marking-to-market is not possible, should banks may mark-to-model, but this must be demonstrated to be prudent. Marking-to-model is defined as any valuation which has to be benchmarked, extrapolated or otherwise calculated from a market input.**

CA-5.1.14 When marking to model, an extra degree of conservatism is appropriate. The CBB will consider the following in assessing whether a mark-to-model valuation is prudent:

- (a) Senior management should be aware of the elements of the trading book or of other fair-valued positions which are subject to mark to model and should understand the materiality of the uncertainty this creates in the reporting of the risk/performance of the business;
- (b) Market inputs should be sourced, to the extent possible, in line with market prices (as discussed above). The appropriateness of the market inputs for the particular position being valued should be reviewed regularly;
- (c) Where available, generally accepted valuation methodologies for particular products should be used as far as possible;



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- (d) Where the model is developed by the institution itself, it should be based on appropriate assumptions, which have been assessed and challenged by suitably qualified parties independent of the development process. The model should be developed or approved independently of the front office. It should be independently tested. This includes validating the mathematics, the assumptions and the software implementation;
- (e) There should be formal change control procedures in place and a secure copy of the model should be held and periodically used to check valuations;
- (f) Risk management should be aware of the weaknesses of the models used and how best to reflect those in the valuation output;
- (g) The model should be subject to periodic review to determine the accuracy of its performance (e.g. assessing continued appropriateness of the assumptions, analysis of P&L versus risk factors, comparison of actual close out values to model outputs); and
- (h) Valuation adjustments should be made as appropriate, for example, to cover the uncertainty of the model valuation.

### *Independent Price Verification*

CA-5.1.15 Independent price verification is distinct from daily mark-to-market. It is the process by which market prices or model inputs are regularly verified for accuracy. While daily marking-to-market may be performed by dealers, verification of market prices or model inputs should be performed by a unit independent of the dealing room, at least monthly (or, depending on the nature of the market/trading activity, more frequently). It need not be performed as frequently as daily mark-to-market, since the objective, i.e. independent, marking of positions, should reveal any error or bias in pricing, which should result in the elimination of inaccurate daily marks.

CA-5.1.16 Independent price verification entails a higher standard of accuracy in that the market prices or model inputs are used to determine profit and loss figures, whereas daily marks are used primarily for management reporting in between reporting dates. For independent price verification, where pricing sources are more subjective, e.g. only one available broker quote, prudent measures such as valuation adjustments may be appropriate.

### *Valuation Adjustments*

CA-5.1.17

As part of their procedures for marking to market, banks must establish and maintain procedures for considering valuation adjustments. The CBB expects banks using third-party valuations to consider whether valuation adjustments are necessary. Such considerations are also necessary when marking to model.



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### CA-5.1.18

The CBB expects the following valuation adjustments/reserves to be formally considered at a minimum: unearned profit, close-out costs, operational risks, early termination, investing and funding costs, and future administrative costs and, where appropriate, model risk.

*Adjustment to the Current Valuation of Less Liquid Positions for Regulatory Capital Purposes*

### CA-5.1.18.A

Banks must establish and maintain procedures for judging the necessity of and calculating an adjustment to the current valuation of less liquid positions for regulatory capital purposes. This adjustment may be in addition to any changes to the value of the position required for financial reporting purposes and should be designed to reflect the illiquidity of the position. The CBB expects banks to consider the need for an adjustment to a position's valuation to reflect current illiquidity whether the position is marked to market using market prices or observable inputs, third-party valuations or marked to model.

### CA-5.1.19

Bearing in mind that the underlying 10-day assumptions made about liquidity in the market risk capital charge may not be consistent with the bank's ability to sell or hedge out less liquid positions, where appropriate, banks must take an adjustment to the current valuation of these positions, and review their continued appropriateness on an ongoing basis. Reduced liquidity may have arisen from market events. Additionally, close-out prices for concentrated positions and/or stale positions should be considered in establishing the adjustment. Banks must consider all relevant factors when determining the appropriateness of the adjustments for less liquid positions. These factors may include, but are not limited to, the amount of time it would take to hedge out the position/risks within the position, the average volatility of bid/offer spreads, the availability of independent market quotes (number and identity of market makers), the average and volatility of trading volumes (including trading volumes during periods of market stress), market concentrations, the aging of positions, the extent to which valuation relies on marking-to-model, and the impact of other model risks not included in Paragraph CA-5.1.18.A.

### CA-5.1.20

[This Paragraph was deleted in January 2012]



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## **CA-5.2 Price Risk**

CA-5.2.1 The capital charge for price risk is 15% of the amount of the position (carrying value).

CA-5.2.2 For commodities exposure in Salam, the capital charge is computed at 15% of the net position in each commodity, plus an additional charge equivalent to 3% of the gross positions, long plus short, to cover basis risk and forward gap risk. The 3% capital charge is also intended to cater for potential losses in Parallel Salam when the seller in the original Salam contract fails to deliver and the bank has to purchase an appropriate commodity in the spot market to honour its obligation. Net positions in commodities are calculated as explained in section CA-5.6. In case of Istisna'a (see paragraph CA-3.4.24) 15% capital charge on net long or short position plus 3% capital charge on gross positions must apply.





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## CA-5.3 Equity Position Risk

### *Introduction*

CA-5.3.1 The minimum capital requirement for equities is expressed in terms of two separately calculated charges, one relating to the “specific risk” of holding a long position in an individual equity, and the other to the “general market risk” of holding a long position in the market as a whole. Where the bank has invested in shares/units of equity funds on Mudaraba financing and the bank has direct exposures in the equities which are traded in a recognised stock exchange, the shares/units are considered to be subject to equity risk. The equity position would be considered to be the net asset value as at the reporting date.

### *Specific Risk Calculation*

CA-5.3.2 Specific risk is defined as the bank’s gross equity positions (i.e. the sum of all equity positions and is calculated for each country or equity market) and is calculated for each country or equity market. For each national market in which the bank holds equities, it should sum the market values of its individual net positions irrespective of whether they are long or short positions, to produce the overall gross equity position for that market.

CA-5.3.3 The capital charge for specific risk is 8%.

CA-5.3.4 [This Paragraph was deleted in January 2012]

### *General Risk Calculation*

CA-5.3.5 The general market risk is calculated by first determining the difference between the sum of the long positions and the sum of the short positions (i.e. the overall net position) in each national equity market. In other words, to calculate the general market risk, the bank should sum the market value of its individual net positions for each national market, taking into account whether the positions are long or short.

CA-5.3.6 The general market equity risk measure is 8% of the overall net position in each national market.



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## CA-5.4 Sukuk

### *Specific Risk for Sukuk*

#### CA-5.4.1

In the case of Sukuk in the trading book, the specific risk charge must be provided on the RW of the issue and the term to maturity of the Sukuk, as follows:

Categories	External credit assessment	Specific risk capital charge
Government (including GCC governments)*	AAA to AA-	0%
	A+ to BBB-	0.25% (residual term to final maturity 6 months or less) 1.00% (residual term to final maturity greater than 6 and up to and including 24 months) 1.60% (residual term to final maturity exceeding 24 months)
	BB+ to B-	8.00%
	Below B-	12.00%
	Unrated	8.00%
Qualifying		0.25% (residual term to final maturity 6 months or less) 1.00% (residual term to final maturity greater than 6 and up to and including 24 months) 1.60% (residual term to final maturity exceeding 24 months)
Other	Similar to credit risk charges under the standardised approach, e.g.:	
	BB+ to BB-	8.00%
	Below BB-	12.00%
	Unrated	8.00%

\* CBB has the discretion to apply a different specific risk weight to sukuk issued by certain foreign government.



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## CA-5.4 Sukuk (continued)

### *General Market Risk for Sukuk*

#### CA-5.4.2

The general market risk<sup>1</sup> must be provided on the residual term to maturity or to the next repricing date, using a simplified form of the Maturity Method on the net positions in each time-band in accordance with the table below:

<b>Residual term to maturity</b>	<b>RW</b>
1 month or less	0.00%
1-3 months	0.20%
3-6 months	0.40%
6-12 months	0.70%
1-2 years	1.25%
2-3 years	1.75%
3-4 years	2.25%
4-5 years	2.75%
5-7 years	3.25%
7-10 years	3.75%
10-15 years	4.50%

CA-5.4.3 In the case of equity investments made by means of a Musharaka or a Mudaraba contract where the underlying assets are commodities, the market risk provisions for commodities, as described below, will be applicable.

<sup>1</sup> At the CBB's discretion, the bank may alternatively use the duration method as set out in the Market risk section of the Basel II Accord (June 2006).



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## CA-5.5 Foreign Exchange Risk

### *Introduction*

CA-5.5.1 This section describes the standardised method for calculation of the bank's foreign exchange risk, and the capital required against that risk.

CA-5.5.2 The measurement of the foreign exchange risk involves, as a first step, the calculation of the net open position in each individual currency including gold and/or silver and as a second step, the measurement of the risks inherent in the bank's mix of assets and liabilities positions in different currencies.

**CA-5.5.3 A bank that holds net open positions (whether assets or liabilities) in foreign currencies is exposed to the risk that exchange rates may move against it. The open positions may be either trading positions or, simply, exposures caused by the bank's overall assets and liabilities. Where the bank is involved in option transactions, these must be agreed in advance with the CBB. The CBB will consider the appropriate treatment on a case by case basis.**

CA-5.5.4 The open positions and the capital requirements are calculated with reference to the entire business (i.e. the banking and trading books).

CA-5.5.5 The open positions are calculated with reference to the bank's base currency, which will be either Bahraini Dinars (BD) or United States dollars (USD).

**CA-5.5.6 In addition to foreign exchange risk, positions in foreign currencies may be subject to credit risk which should be treated separately. For the purposes of calculating "Foreign Exchange Risk" only, positions in those GCC currencies which are pegged to US\$, will be treated as positions in US\$.**

### *De Minimis Exemptions*

CA-5.5.7 A bank doing negligible business in foreign currencies and which does not take foreign exchange positions for its own account may, at the discretion of the CBB and as evidenced by the CBB's prior written approval, be exempted from calculating the capital requirements on these positions. The CBB is likely to be guided by the following criteria in deciding to grant exemption to any bank:

- (a) The bank's holdings or taking of positions in foreign currencies, including gold and/or silver, defined as the greater of the sum of the gross asset positions and the sum of the gross liability position in all foreign positions and gold and/or silver, does not exceed 100% of its eligible capital; and
- (b) The bank's overall net open position, as defined in CA-5.5.15 does not exceed 2% of its eligible capital.



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## CA-5.5 Foreign Exchange Risk (continued)

CA-5.5.8 The criteria listed above are only intended to be guidelines, and a bank will not automatically qualify for exemptions upon meeting them. Banks doing negligible foreign currency business, which do not take foreign exchange positions for the bank's own account, and wish to seek exemption from foreign exchange risk capital requirements, should submit an application to the CBB, in writing. The CBB will have the discretion to grant such exemptions. The CBB may also, at its discretion, fix a minimum capital requirement for a bank that is exempted from calculating its foreign exchange risk capital requirement, to cover the risks inherent in its foreign currency business.

CA-5.5.9 The CBB may, at a future date, revoke an exemption granted to a bank, if the CBB is convinced that the conditions on which the exemption was granted no longer exist.

### *Calculation of Net Open Positions*

#### CA-5.5.10

A bank's exposure to foreign exchange risk in any currency is its net open position in that currency, which is calculated by summing the following items:

- (a) The net spot position in the currency (i.e. all assets items less all liability items, including accrued profit, other income and expenses, denominated in the currency in question; assets are included gross of provisions for bad and doubtful debts, except in cases where the provisions are maintained in the same currency as the underlying assets);
- (b) The net forward position in the currency (i.e. all amounts to be received less all amounts to be paid under forward foreign exchange contracts, in the concerned currency);
- (c) Guarantees and similar off-balance sheet contingent items that are certain to be called and are likely to be irrecoverable where the provisions, if any, are not maintained in the same currency;
- (d) Profits (i.e. the net value of income and expense accounts) held in the currency in question; and
- (e) Specific provisions held in the currency in question where the underlying asset is in a different currency, net of assets held in the currency in question where a specific provision is held in a different currency.



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## CA-5.5 Foreign Exchange Risk (continued)

### CA-5.5.11

For calculating the net open position in gold and/or silver, the bank must first express the net position (spot plus forward) in terms of the standard unit of measurement (i.e. ounces or grams) and then convert it at the current spot rate into the base currency.

CA-5.5.12 Where gold and/or silver are part of a forward contract (i.e. quantity of gold and/or silver to be received or to be delivered), any foreign currency exposure from the other leg of the contract should be reported.

### *Structural Positions*

CA-5.5.13 Positions of a structural nature (i.e. non-dealing), may be excluded from the calculation of the net open currency positions, these include positions related to items that are deducted from the bank's capital when calculating its capital base in accordance with the rules and guidelines issued by the CBB, such as investments denominated in foreign currencies in non-consolidated subsidiaries.

CA-5.5.14 The CBB will consider approving the exclusion of the above positions for the purpose of calculating the capital requirement, only if each of the following conditions is met:

- (a) The concerned bank provides adequate documentary evidence to the CBB which establishes the fact that the positions proposed to be excluded are, indeed, of a structural nature (i.e. non-dealing) and are merely intended to protect the bank's CAR. For this purpose, the CBB may ask written representations from the bank's management or directors.
- (b) Any exclusion of a position is consistently applied, with the treatment of the structural positions remaining the same for the life of the associated assets or other items.

### *Calculation of the Overall Net Open Position*

### CA-5.5.15

The net position in each currency is converted at the spot rate, into the reporting currency. The overall net open position must be measured by aggregating the following:

- (a) The sum of the net liabilities positions or the sum of the net asset positions whichever is greater
- (b) The net position (liabilities and assets) in gold and/or silver, regardless of sign.



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## CA-5.5 Foreign Exchange Risk (continued)

CA-5.5.16 Where the bank is assessing its foreign exchange on a consolidated basis, it may be technically impractical in the case of some marginal operations to include the currency positions of a foreign branch or subsidiary of the bank. In such cases, the internal limit for that branch/subsidiary, in each currency, may be used as a proxy for the positions. The branch/subsidiary limits should be added, without regard to sign, to the net open position in each currency involved. When this simplified approach to the treatment of currencies with marginal operations is adopted, the bank should adequately monitor the actual positions of the branch/subsidiary against the limits, and revise the limits, if necessary, based on the results of the ex-post monitoring.

### *Calculation of the Capital Charge*

**CA-5.5.17** The capital charge is 8% of the overall net open foreign currency position.

CA-5.5.18 The table below illustrates the calculation of the overall net open foreign currency position and the capital charge:

**Example of the calculation of the foreign exchange overall net open position and the capital charge**

GBP	DEM	SAR	US\$	JPY	GOLD and/or silver
+200	+100	+70	-190	-40	-50
+370			-230		50

*The capital charge is 8% of the higher of either the sum of the net long currency positions or the sum of the net short positions (i.e. 370) and of the net position in gold and/or silver (i.e. 50) = 420 @ 8% = 33.6*



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## CA-5.6 Commodities Risk

### *Introduction*

CA-5.6.1 This section sets out the minimum capital requirements to cover the risk of holding or taking positions in commodities, including precious metals, but excluding gold and silver (which is treated as a foreign currency according to the methodology explained in section CA-5.5).

CA-5.6.2 The commodities position risk and the capital charges are calculated with reference to the entire business of a bank (i.e. the banking and trading books combined).

CA-5.6.3 The price risk in commodities is often more complex and volatile than that associated with currencies. Banks need to guard against the risk that arises when a liability (i.e. in a Parallel Salam transaction) position falls due before the asset position (i.e. a failure associated with or delay in the Salam contract). Owing to a shortage of liquidity in some markets, it might be difficult to close the Parallel Salam position and the bank might be “squeezed by the market”. All these commodity market characteristics can result in price transparency and the effective management of risk.

**CA-5.6.4** All contracts (Salam, Musharakah or Mudarabah) involving commodities as defined in chapters CA-3.3, CA-3.6 and CA-3.7 are subject to commodities risk and a capital charge as per the relevant provisions must be computed.

CA-5.6.5 Banks should adopt either the simplified approach to calculate their commodities risk and the resultant capital charges or the maturity ladder approach.

### *Calculation of Commodities Positions*

**CA-5.6.6** Banks must first express each commodity position (i.e. Salam and Parallel Salam) in terms of the standard unit of measurement (i.e. barrels, kilograms, grams, etc). Assets and liabilities positions in a commodity are reported on a net basis for the purpose of calculating the net open position in that commodity. For markets which have daily delivery dates, any contracts maturing within ten days of one another may be offset. The net position in each commodity is then converted, at spot rates, into the bank’s reporting currency.





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## CA-5.6 Commodities Risk (continued)

CA-5.6.7 Positions in different commodities cannot be offset for the purpose of calculating the open-positions as described above. However, where one or more sub-categories<sup>2</sup> of the same category are in effect and are directly deliverable against each other, netting between those sub-categories is permitted. Furthermore, if two or more sub-categories of the same category is considered as close substitutes for each other, and minimum correlation of 0.9 between their price movements is clearly established over a minimum period of one year, the bank may, with the prior written approval of the CBB, net positions in those sub-categories.

**CA-5.6.8 Banks, which wish to net positions based on correlation (in the manner discussed above), must satisfy the CBB of the accuracy of the method which it proposes to adopt.**

### *Maturity Ladder Approach*

CA-5.6.9 A worked example of the maturity ladder approach is set out in Appendix CA-3 and the table below illustrates the maturity time-bands of the maturity ladder for each commodity.

**CA-5.6.10 The steps in the calculation of the commodities risk by the maturity ladder approach are:**

- (a) The net positions in individual commodities, expressed in terms of the standard unit of measurement, are first slotted into the maturity ladder. Physical stocks are allocated to the first-time band. A separate maturity ladder is used for each commodity.
- (b) Asset and liability positions in the same time-band are matched. The sum of the matched asset and liability positions is multiplied first by the spot price of the commodity, and then by a spread of 1.5% for each time-band as set out in the table below. This represents the capital charge in order to capture all risks within a time-band (which, together, are sometimes referred to as curvature risk).

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<sup>2</sup> Commodities can be grouped into clan, families, sub-groups and individual commodities. For example a clan might be Energy Commodities, within which Hydro-Carbons is a family with Crude Oil being a sub-group and West Texas Intermediate, Arabian light and Brent being individual commodities.



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**CA-5.6 Commodities Risk (continued)**

Time band <sup>3</sup>	
0-1	months
1-3	months
3-6	months
6-12	months
1-2	years
2-3	years
over 3	years

CA-5.6.11 The residual (unmatched) net positions from nearer time-bands are then carried forward to offset opposite positions (i.e. asset against liability and vice versa) in time bands that are further out. However, a surcharge of 0.6% of the net position carried forward is added in respect of each time-band that the net position is carried forward, to recognise that such management of positions between different time-bands is imprecise. The surcharge is in addition to the capital charge for each matched amount created by carrying net positions forward, and is calculated as explained in step (b) above.

CA-5.6.12 At the end of step (c), there will be either asset or liability positions, to which a capital charge of 15% will apply. The CBB recognises that there are differences in volatility between different commodities, but has, nevertheless, decided that one uniform capital charge for open positions in all commodities shall apply in the interest of simplicity of the measurement, and given the fact that banks normally run rather small open positions in commodities. Banks will be required to submit in writing, details of their commodities business in order to capture the market risk on this business and to enable the CBB to evaluate whether the models approach should be adopted by the bank.

<sup>3</sup> Instruments, where the maturity is on the boundary of two maturity time-bands, should be placed into the earlier maturity band. For example, instruments with a maturity of exactly one-year are placed into the 6 to 12 months time-band.



<b>MODULE</b>	<b>CA: Capital Adequacy</b>
<b>CHAPTER</b>	<b>CA-6: Operational Risk</b>

## **CA-6.1 Definition of Operational Risk**

CA-6.1.1 Operational risk is defined as the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events which includes but is not limited to, legal risk and Sharia compliance risk. This definition excludes strategic and reputational risk.

CA-6.1.2 Sharia compliance risk is an operational risk facing Islamic banks which can lead to non-recognition of income and resultant losses.



<b>MODULE</b>	<b>CA:</b>	<b>Capital Adequacy</b>
<b>CHAPTER</b>	<b>CA-6:</b>	<b>Operational Risk</b>

## CA-6.2 The Measurement Methodologies

CA-6.2.1 The framework outlined below presents two methods for calculating operational risk capital charges in a continuum of increasing sophistication and risk sensitivity:

- (a) The Basic Indicator Approach; and
- (b) The Standardised Approach.

CA-6.2.2 A bank will not be allowed to choose to revert to basic indicator approach once it has been approved for standardised approach without CBB's approval. However, if CBB determines that a bank using the standardised approach no longer meets the qualifying criteria for the standardised approach, it may require the bank to revert to the basic indicator approach for some or all of its operations, until it meets the conditions specified by the CBB for returning to the standardised approach.

### *Basic Indicator Approach*

#### CA-6.2.3

Banks using the Basic Indicator Approach must hold capital for operational risk equal to the average over the previous three years of a fixed percentage (denoted alpha) of positive annual gross income. Figures for any year in which annual gross income is negative or zero should be excluded from both the numerator and denominator when calculating the average.<sup>4</sup> The charge may be expressed as follows:

$$K_{BIA} = [\sum (GI_{1..n} \alpha n)]/n$$

where:

$K_{BIA}$  = the capital charge under the Basic Indicator Approach

GI = annual gross income, where positive, over the previous three years (audited financial years)

N = number of the previous three years for which gross income is positive

$\alpha$  = 15%, relating the industry wide level of required capital to the industry wide level of the indicator.

<sup>4</sup> If negative gross income distorts a bank's Pillar 1 capital charge, CBB will consider appropriate supervisory action.



<b>MODULE</b>	<b>CA:</b>	<b>Capital Adequacy</b>
<b>CHAPTER</b>	<b>CA-6:</b>	<b>Operational Risk</b>

## CA-6.2 The Measurement Methodologies (continued)

CA-6.2.4 The extent of losses arising from non-compliance with Sharia rules and principles cannot be ascertained owing to the lack of data. Therefore, banks are not required to set aside any additional amount over and above the 15% of average annual gross income over the preceding three years for operational risk.

CA-6.2.5 Gross income is defined as:

- (a) Net income from financing activities which is gross of any provisions, operating expenses, realised profits/losses from the sale of securities in the banking book, and depreciation of Ijarah assets;
- (b) Net income from investment activities; and
- (c) Fee income (e.g. commission and agency fee)

Less:

- (d) Investment account holders' share of income
- (e) Takaful income

In case of a bank with negative gross income for the previous three years, a newly licensed bank with less than 3 years of operations, or a merger, acquisition or material restructuring, the CBB shall discuss with the concerned licensed bank an alternative method for calculating the operational risk capital charge. For example, a newly licensed bank may be required to use the projected gross income in its 3-year business plan. Another approach that the CBB may consider is to require such licensed banks to observe a higher CAR.

CA-6.2.6 Gross income includes income attributable to restricted and unrestricted Profit Sharing Investment Accounts' funds, but excludes extraordinary or exceptional income. Net income from investment activities includes the bank's share of profit from Musharakah and Mudarabah financing activities.

CA-6.2.7 Banks applying this approach are encouraged to comply with the principles set in section OM-8.2 of Operational Risk Management Module.

### *The Standardised Approach*

**CA-6.2.8** In the Standardised Approach, banks' activities are divided into eight business lines: corporate finance, trading & sales, retail banking, commercial banking, payment & settlement, agency services, asset management, and retail brokerage. The business lines are defined in detail in Appendix CA-4. The bank must meet the requirements detailed in section OM-8.3 to qualify for the use of standardised approach.



<b>MODULE</b>	<b>CA:</b>	<b>Capital Adequacy</b>
<b>CHAPTER</b>	<b>CA-6:</b>	<b>Operational Risk</b>

## CA-6.2 The Measurement Methodologies (continued)

CA-6.2.9 Within each business line, gross income is a broad indicator that serves as a proxy for the scale of business operations and thus the likely scale of operational risk exposure within each of these business lines. The capital charge for each business line is calculated by multiplying gross income by a factor (denoted beta) assigned to that business line. Beta serves as a proxy for the industry-wide relationship between the operational risk loss experience for a given business line and the aggregate level of gross income for that business line. It should be noted that in the Standardised Approach, gross income is measured for each business line, not the whole institution, i.e. in corporate finance, the indicator is the gross income generated in the corporate finance business line.

### CA-6.2.10

The total capital charge is calculated as the three-year average of the simple summation of the regulatory capital charges across each of the business lines in each year. In any given year, negative capital charges (resulting from negative gross income) in any business line can not off-set positive capital charges in other business lines. Where the aggregate capital charge across all business lines within a given year is negative, then the input to the numerator for that year will be zero.<sup>5</sup> The total capital charge may be expressed as:

$$K_{TSA} = \{ \sum_{\text{years } 1-3} \max[(GI_{1-8} \times \beta_{1-8}), 0] \} / 3$$

where:

$K_{TSA}$  = the capital charge under the Standardised Approach

$GI_{1-8}$  = annual gross income in a given year, as defined above in the Basic Indicator Approach, for each of the eight business lines

$\beta_{1-8}$  = a fixed percentage, relating the level of required capital to the level of the gross income for each of the eight business lines.

The values of the betas are detailed below.

<u>Business Lines</u>	<u>Beta Factors (%)</u>
Corporate Finance ( $\beta_1$ )	18
Trading and Sales ( $\beta_2$ )	18
Retail Banking ( $\beta_3$ )	12
Commercial Banking ( $\beta_4$ )	15
Payment and Settlement ( $\beta_5$ )	18
Agency Services ( $\beta_6$ )	15
Asset Management ( $\beta_7$ )	12
Retail Brokerage ( $\beta_8$ )	12

<sup>5</sup> As under the Basic Indicator Approach, if negative gross income distorts a bank's Pillar 1 capital charge under the Standardised Approach, CBB will consider appropriate supervisory action.



<b>MODULE</b>	<b>CA: Capital Adequacy</b>
<b>CHAPTER</b>	<b>CA-7: Profit Sharing Investment Accounts</b>

## CA-7.1 Profit Sharing Investment Accounts

CA-7.1.1 This chapter deals with the capital adequacy requirement for assets financed by Profit Sharing Investment Accounts (PSIA), a pool of investment funds placed with an Islamic bank on the basis of Mudarabah.

CA-7.1.2 The PSIA (commonly referred to as “investment accounts” or “special investment accounts”) can be further categorised into:

- (a) Unrestricted PSIA; and
- (b) Restricted PSIA.

CA-7.1.3 The bank has full discretionary powers in making investment decisions for unrestricted PSIA's. However, the placement of funds in restricted PSIA's by the bank is subject to investment criteria specified by the bank, or by the customer, in the Mudarabah contract, or agreed between the investment account holders (IAH) and the bank at the time of contracting.

CA-7.1.4 The bank assumes the role of an economic agent or Mudarib in placing such funds in income-producing assets or economic activities, and as such is entitled to a share (the Mudarib share) in the profits (but not losses) earned on funds managed by it on behalf of the IAH, according to a pre-agreed ratio specified in the Mudarabah contract.

### *Reserves*

CA-7.1.5 The bank can take precautionary steps by setting up prudential reserve accounts to minimise the adverse impact of income smoothing for PSIA on its shareholders' returns and to meet unexpected losses (UL) that would be borne by the IAH on investments financed by PSIA, namely:

- Profit equalisation reserve (PER)  
PER comprises of allocations from the gross income<sup>6</sup> of the Mudarabah to be available for smoothing returns paid to the investment account holders and the shareholders, and consists of a PSIA portion and a shareholder's portion; and/or
- Investment risk reserve (IRR)  
IRR comprises amounts appropriated out of the income of investment account holders after deduction of the Mudarib share of income, to meet any potential future losses on the investments financed by the PSIA.

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<sup>6</sup> In some countries, the appropriation of income is to be made out of after tax income.



MODULE	CA: Capital Adequacy
CHAPTER	CA-8: Gearing Requirements

## CA-8.1 Gearing

**CA-8.1.1** The content of this Chapter is applicable to locally incorporated banks and Bahrain retail bank branches of foreign banks.

### *Measurement*

**CA-8.1.2** The Gearing ratio is measured with reference to the ratio of deposit liabilities against the bank's capital and reserves as reported in its PIRI.

### *Gearing Limit*

**CA-8.1.3** For Retail Bank and Wholesale bank licensees, deposit liabilities should not exceed 20 times the respective bank's capital and reserves.