

**INSTRUCTIONS FOR ACCOMPLISHING THE REPORT ON COMPUTATION OF THE  
ADJUSTED RISK-BASED CAPITAL ADEQUACY RATIO COVERING COMBINED CREDIT  
RISK AND MARKET RISK  
(For Universal Banks and Commercial Banks With Expanded Derivatives Authority)  
(Appendix to Sec. 125 on Market risk capital requirement)**

**General Instructions**

1. All universal banks and commercial banks are required to complete this Report both on a solo basis (i.e., head office plus branches) and on a consolidated basis (i.e., parent bank plus subsidiary financial allied undertakings, but excluding insurance companies).
2. The Report should be submitted as follows:
  - a) Solo report - within 15 banking days after the end of each reference quarter; and
  - b) Consolidated report - within 30 banking days after the end of each reference quarter.
3. Current market value should be used for reporting. For leveraged instruments where the apparent notional amount differs from the effective notional amount, the bank should use the effective notional amount in calculating the market value for reporting, e.g., a swap contract with a stated notional amount of PHP1.0 million, the terms of which call for a quarterly settlement of the difference between five percent (5%) and PHIBOR multiplied by 10 has an effective notional amount of PHP10.0 million.
4. Securities transactions are to be reported on a "trade date" basis.

**Definitions and Clarifications**

5. Market risk is defined as the risk of losses in on- and off-balance sheet positions arising from movements in market prices. The risks subject to this reporting requirement are:
  - a) the risks pertaining to interest rate- related instruments and equities in the bank's trading book; and
  - b) foreign exchange risk throughout the bank.

The Report should include the reporting bank's positions in on-balance sheet financial instruments and off- balance sheet derivatives, the latter being defined as financial contracts whose values depend on the values of one or more underlying assets or indices.

6. For the purpose of the Report, the trading book of a bank shall consist of:
- a) its proprietary positions in financial instruments which are taken on with the intention of short-term resale or benefiting in the short term from actual or expected differences between the buying and selling prices or from other price or interest rate variations;
  - b) positions which arise from the execution of trade orders from customers and market making;  
and
  - c) positions taken in order to hedge other elements of the trading book.
7. The financial instruments referred to in the preceding paragraph include:
- a) (i) transferable securities;  
(ii) units in collective investment undertakings;
  - b) certificates of deposit and other similar capital market instruments;
  - c) financial futures contracts;
  - d) forward contracts including forward rate agreements;
  - e) swaps; and
  - f) options.
8. Banks are expected to have an established policy for allocating transactions (including internal deals) to the trading or non-trading (i.e., banking) book, as well as procedures to ensure compliance with such policy. There must be a clear audit trail at the time each transaction is entered into and the Bangko Sentral will examine the adequacy of such policy and procedures and their consistent implementation when it is considered necessary. For this purpose, banks which engage in trading activities should submit to the Bangko Sentral a policy statement covering:
- a) the definition of trading activities;
  - b) the financial instruments which can be traded or used for hedging the trading book portfolio;  
and
  - c) the principles for transferring positions between the trading and the banking books.
9. In general, the Bangko Sentral will have regard to the bank's intention in entering into a particular transaction when determining whether such transaction should fall into the trading book. Transactions will likely be considered to carry a trading intent on the part of the bank if:
- a) the positions arising from the transactions are marked to market on a daily basis as part of

- the internal risk management process;
- b) the positions are not (or not intended to be) held to maturity; and
- c) the positions satisfy other criteria the bank applies to its trading portfolio on a consistent basis.
10. Debt securities include both fixed- rate and floating-rate instruments, negotiable certificates of deposit, non-convertible preference shares, and also convertible bonds (i.e., debt issues or preference shares that are convertible, at a stated price, into common shares of the issuer) which trade like debt securities. Debt related derivatives include bond futures and bond options. Options are subject to special treatment described in detail under Part IV of Specific Instructions.
11. Interest rate derivatives include all derivatives contracts and off-balance sheet instruments which react to changes in interest rates, e.g., interest rate futures, forward rate agreements (FRAs), interest rate and cross currency swaps, interest rate options and forward foreign exchange positions. As noted above, the treatment for options is described in Part IV of Specific Instructions.
12. Detailed offsetting rules applicable to the reporting of positions are set out in the relevant parts of Specific Instructions. These offsetting rules can be applied on both the solo and consolidated basis, provided that in the latter case there are no obstacles to the quick repatriation of profits from a foreign subsidiary to the Philippines and the bank performs daily management of risks on a consolidated basis. For this purpose, offsetting means the exclusion of matched positions of a bank from reporting and hence exclusion of such positions from the calculation of the adjusted capital adequacy ratio.
13. For avoidance of doubt, items that are deductible from the qualifying capital of the bank in the calculation of the risk-based capital adequacy ratio under applicable and existing capital adequacy framework are excluded from market risk capital requirement.
14. In general, banks are only required to complete Parts I to IV and VI of the Report. Banks which have obtained the Bangko Sentral's approval to adopt their internal value-at-risk (VaR) models to calculate their market risk capital charge (in all or individual risk categories) should complete Part V (in lieu of Parts I to IV). Where the internal model is used to calculate only selected risk categories, the capital charge for the risk categories measured under the internal models approach should be reported in Part V while that for the other risk categories measured under the standardized approach should be reported in the relevant sections of Parts I to IV. This combination of the standardized approach and the internal models approach is allowed on a transitional basis. Banks which adopt the internal models approach will not be permitted, save in exceptional circumstances, to revert to the standardized approach.

## **Specific Instructions**

### **Part I Interest Rate Exposures**

#### **1. Debt securities and debt related derivatives - specific risk**

15. Report in this part the long and short positions in debt securities and debt derivatives (e.g., bond futures and bond options) in the trading book by category of the issuer. Offsetting will be allowed between long and short positions in identical issues (including positions in derivatives) with exactly the same issuer, coupon, currency and maturity. For items 1.4 to 1.7 of the Report, positions should be slotted into the appropriate time bands according to the residual maturities of the debt securities (or the underlying securities in case of debt derivatives). (Refer to examples (1) and (2) in Annex A).
16. A security, which is the subject of a repurchase agreement, will be treated as if it were still owned by the seller of the security, i.e., to be reported by the seller. This principle applies also in Part 1.2 of the Report. Commitments to buy and sell securities should be reported as long and short positions, respectively.
17. Foreign countries, foreign incorporated banks and Philippine incorporated banks/ QBs with the “highest credit quality”, as well as debt securities with the “highest credit quality” refer to ratees/debt securities given the minimum credit ratings as indicated below by any two of the following internationally accepted rating agencies:

<u>Rating Agency</u>	<u>Credit Rating</u>
(a) Moody’s	“Aa3” and above
(b) Standard and Poor’s	“AA-” and above
(c) Fitch IBCA	“AA-” and above

and such other recognized international rating agencies as may be approved by the Monetary Board.

The ratings of domestic rating agencies may likewise be used for this purpose provided that such rating agencies meet the criteria to be prescribed by the Monetary Board.

18. Multilateral development banks refer to the World Bank Group comprised of the International Bank for Reconstruction and Development (IBRD) and the International Finance Corporation (IFC), the Asian Development Bank (ADB), the African Development Bank (AfDB), the European Bank for Reconstruction and Development (EBRD), the Inter-American Development Bank

(IADB), the European Investment Bank (EIB); the Nordic Investment Bank (NIB); the Caribbean Development Bank (CDB), the Council of Europe Development Bank (CEDB) and such others as may be recognized by the Bangko Sentral.

19. Non-central government public sector entities of a foreign country refer to entities which are regarded as such by a recognized banking supervisory authority in the country in which they are incorporated.

## **2. Debt securities, debt related derivatives and interest rate derivatives - general market risk**

20. Report in this part the long and short trading book positions in debt securities and debt derivatives described above, as well as interest rate derivatives. Report also interest rate exposures arising from futures contracts and forward positions in equities. A Maturity Method is adopted for the reporting of these positions as detailed below. Banks that possess the necessary capability to calculate the duration and price sensitivity of each position separately and wish to adopt such a duration approach for reporting in this part may seek approval from Bangko Sentral.
21. Positions should be reported separately for each currency, i.e., banks should use separate sheets (Part I.2 of the Report) to report positions of different currencies. The unadjusted market risk capital charge is then calculated for each currency according to procedures set out in paragraphs 31 to 34 with no offsetting between different currencies.
22. Under the Maturity Method, positions are slotted into the time bands of the maturity ladder (as shown in Part I.2 of the Report) by remaining maturity if fixed rate and by the period to the next repricing date if floating rate. (Refer to examples (1) and (2) in Annex A). Derivatives should be treated as combinations of long and short positions. The maturity of an interest rate future or a forward rate agreement will be the period until delivery or exercise of the contract, plus - where applicable - the life of the underlying instrument. For example, a long position in a June 3-month interest rate future taken in December is to be reported at end of December as a long position in a zero coupon government security in that particular currency with a maturity of 9 months and a short position in a zero coupon government security with a maturity of 6 months. (Refer to examples (5) and (6) in Annex A). The market values of the two positions should be reported. For forward foreign exchange positions in the trading book, they should be treated as long and as short positions in a zero coupon government security of the 2 currencies with the same maturity as the forward contract. (Refer to example (8) in Annex A).
23. For a bond future, where a range of deliverable instruments may be delivered to fulfill the contract, the bank has flexibility to elect which deliverable security goes into the maturity ladder

but should take account of any conversion factor defined by the exchange. A two-leg approach will be adopted similar to the above. A long bond future will be taken as a long position in a deliverable bond and a short position in a zero coupon security maturing at the future's delivery date. For example, a long futures contract on a 5 year fixed rate security with delivery 3 months from the reporting date will be reported as a long position in say, a 5.25 year security, i.e., a specific security which is within the range of deliverables under the futures contract (as opposed to a notional/ theoretical security), and a short position in a 3 months zero coupon security. (Refer to example (3) in Annex A).

The amount to be reported in the above example for both legs will be the contract face value divided by the relevant conversion factor and multiplied by the current cash price of the selected deliverable bond. A forward bond transaction (i.e., with a settlement period longer than the market norm) will be treated similarly, i.e., a long bond forward will be reported as long position in the bond and a short position in a zero coupon security up to the forward delivery date. The current market value (at spot price) of the bond should be reported.

24. Swaps will be treated as two positions in securities with the relevant maturities. For example, an interest rate swap under which a bank is receiving floating rate interest and paying fixed will be treated as a long position in a floating rate instrument of maturity equivalent to the period until the next interest fixing and a short position in a fixed-rate instrument of maturity equivalent to the residual life of the swap. The market values of the 2 instruments should be reported. (Refer to example (4) in Annex A). For swaps that pay or receive a fixed or floating interest rate against some other reference price, e.g., an equity price, the interest rate component should be slotted into the appropriate maturity category, with the equity component being included in the equity framework. The separate legs of cross-currency swaps are to be reported in the relevant maturity ladders for the currencies concerned. (Refer to example (12) in Annex A).
25. As with the reporting under Part I.1 of the Report, banks can offset long and short positions in identical instruments with exactly the same issuer, coupon, currency and maturity for general market risk purposes. Similarly, a matched position in a futures or forward contract and its underlying may be fully offset. However, the leg representing the time to expiry of the futures or forward contract should be reported.

For example, a bank has a long position in a particular bond and sells forward (i.e., beyond the normal settlement period for the security) such a bond as at the reporting date. The long and short positions in the bond can be offset but a long position in a (notional) zero coupon security with maturity at the forward delivery date should be reported, at the current market value of the bond. Similarly, if the bank has a short position in a bond future and a long position in the underlying bond, such positions can be offset. A long position up to the future's delivery

date should, however, be reported.

When the futures contract comprises a range of deliverable instruments, offsetting of positions in the futures contract and its underlying is only permissible in cases where there is a readily identifiable underlying security which is most profitable for the trader with a short position to deliver, i.e., the “cheapest to deliver”. This means that offsetting is only permitted between a short future and a long bond, not between a long future and a short bond; and the long bond must be the one that is “cheapest to deliver”. The amount to be reported for the remaining long position up to the futures contract’s delivery date will be the face value of the contract divided by the relevant conversion factor and multiplied by the current spot price of the “cheapest to deliver” bond.

26. Opposite positions in the same category of derivatives instruments (including the delta-equivalent value of options where the delta-plus approach for options is adopted – see Part IV of the Report) can in certain circumstances be regarded as matched and allowed to offset fully. The separate legs of different swaps may also be “matched” subject to the same conditions. To qualify for this treatment, the positions must relate to the same underlying instruments, be of the same nominal value and be denominated in the same currency. In addition:

- a) for futures: offsetting positions in the notional or underlying instruments to which the futures contract relates must be for identical products and mature within 7 days of each other;
- b) for swaps and forward rate agreements (FRAs): the reference rate (for floating rate positions) must be identical and the coupon closely matched (i.e., within 15 basis points); and
- c) for swaps, FRAs and forwards: the next interest fixing date or, for fixed coupon positions or forwards, the residual maturity must correspond within the following limits:
  - if either of the instruments for offsetting has an interest fixing date or residual maturity up to 1 month, the interest fixing date or residual maturity must be the same for both instruments;
  - if either of the instruments for offsetting has an interest fixing date or residual maturity greater than 1 month and up to 1 year, those dates or residual maturities must be within 7 days of each other; and
  - if either of the instruments for offsetting has an interest fixing date or residual maturity over 1 year, those dates or residual maturities must be within 30 days of each other.

For example, a bought and a sold FRA in the same currency with the same face value and settlement date as well as notional deposit maturity date can be offset against each other and excluded from reporting if the contract rates are within 15 basis points of each other. Similarly,

opposite swap positions in the same currency with the same face value and reference dates can be offset if, say, the floating rate in both cases is 6 months PHIBOR and the fixed rates are within 15 basis points of each other. The positions can still be offset if the reference dates (i. e., the next interest fixing date or remaining maturity) of the opposite positions are different but within the range as set out in (c) above. Opposite bond futures can, for example, be offset against each other if the deliverable bonds are of the same type and mature within 7 days of each other.

27. Banks with the necessary expertise and systems may use alternative formulae (the so called “pre-processing” techniques) to calculate the positions to be included in the maturity ladder. This applies to all interest rate sensitive positions, arising from both physical and derivative instruments. One method is to first convert the payments required under each transaction into their present values. For that purpose, each cash flow should be discounted using zero-coupon yields. A single net figure of all of the cash flows within each time band may be reported. Banks wishing to adopt this or other methods for reporting should seek the Bangko Sentral’s prior approval. The “pre-processing” models would be subject to review by the Bangko Sentral.

#### Calculation of capital charges for interest rate exposures reported in Part I

28. The unadjusted minimum capital requirement is expressed in terms of two separately calculated charges, one applying to the “specific risk” of each trading book position in debt securities or debt derivatives, whether it is a short or long position, and the other to the overall interest rate risk in the trading book portfolio (termed “general market risk”) where long and short positions in different securities or derivatives can be offset subject to certain “disallowances”.

#### Specific risk

29. The unadjusted specific risk charge is graduated into five broad categories by types of issuer, as follows:

Government and multilateral banks <sup>1</sup>	0.00%
Qualifying <sup>2</sup>	.25% (residual maturity of 6 months or less)
	1.00% (residual maturity of over 6 months to 24 months)
	1.60% (residual maturity of over 24 months)
LGU bonds <sup>3</sup>	4.00%
Others	8.00%

30. Interest rate and currency swaps, FRAs, forward foreign exchange contracts and interest rate futures will not be subject to a specific risk charge. In the case of futures contracts where the



underlying is a debt security, a specific risk charge will apply according to the issuer (and the remaining maturity) as set out in the above paragraph.

## General market risk

31. General market risk General market risk applies to positions in all debt securities, debt derivatives and interest rate derivatives, subject only to an exemption for fully or very closely matched positions in identical instruments as described in paragraphs 25 to 26 above. The unadjusted capital charge is the sum of the following components:

- a) the net short or long weighted position in the whole trading book;
- b) a small proportion of the matched positions in each time band (the “vertical disallowance”);  
and
- c) a larger proportion of the matched positions across different time-bands (the “horizontal disallowance”).

32. In the maturity ladder, first calculate the weighted positions by multiplying the positions reported in each time band by a risk-factor according to the following table:

**Table 1**  
**Maturity method: time bands and weights**

<b>Coupon 3% or more</b>	<b>Coupon less than 3%</b>	<b>Risk weight</b>
1 month or less	1 month or less	0.00%
Over 1 month to 3 months	Over 1 month to 3 months	0.20%
Over 3 months to 6 months	Over 3 months to 6 months	0.40%
Over 6 months to 12 months	Over 6 months to 12 months	0.70%
Over 1 to 2 years	Over 1.0 year to 1.9 years	1.25%
Over 2 years to 3 years	Over 1.9 years to 2.8 years	1.75%
Over 3 years to 4 years	Over 2.8 years to 3.6 years	2.25%
Over 4 years to 5 years	Over 3.6 years to 4.3 years	2.75%
Over 5 years to 7 years	Over 4.3 years to 5.7 years	3.25%
Over 7 years to 10 years	Over 5.7 years to 7.3 years	3.75%
Over 10 years to 15 years	Over 7.3 years to 9.3 years	4.5%
Over 15 years to 20 years	Over 9.3 years to 10.6 years	5.25%
Over 20 years	Over 10.6 years to 12 years	6.00%
	Over 12 years to 20 years	8.00%

	Over 20 years	12.50%
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33. The weighted longs and shorts in each time band will be offset resulting in a single short or long position for each band. A 10% capital charge (“vertical disallowance”) will be levied on the smaller of the offsetting positions, be it long or short. Thus, if the sum of the weighted longs in a time band is P100.0 million and the sum of the weighted shorts is PHP90.0 million, the vertical disallowance would be 10% of PHP90.0 million (i.e., PHP9.0 million).
34. Two rounds of “horizontal offsetting” will then be conducted, first between the net positions in each of 3 zones (zero to 1 year, over 1 year to 4 years and over 4 years), and subsequently between the net positions in the 3 different zones. The offsetting will be subject to a scale of disallowances expressed as a fraction of the matched positions, as set out in Table 2 below. The weighted long and short positions in each of 3 zones may be offset, subject to the matched portion attracting a disallowance factor that is part of the capital charge. The residual net position in each zone may be carried over and offset against opposite positions in other zones, subject to a second set of disallowance factors.

**Table 2**  
**Horizontal disallowances**

Zones	Time-Band	Within the zone	Between adjacent zones	Between zones 1 and 3
Zone 1	1 month or less	40%	40%	100%
	Over 1 month to 3 months			
	Over 3 months to 6 months			
	Over 6 months to 12 months			
Zone 2	Over 1 year to 2 years	30%		
	Over 2 years to 3 years			
	Over 3 years to 4 years			
Zone 3	Over 4 years to 5 years	30%		
	Over 5 years to 7 years			
	Over 7 years to 10 years			
	Over 10 years to 15 years			
	Over 15 years to 20 years			
	Over 20 years			

## Part II Equity Exposures

35. Report in this part the long and short positions in equities and equity derivatives in the trading book, including instruments that exhibit market behavior similar to equities. The instruments covered include common stock (whether voting or non-voting), convertible bonds (i.e., debt issues or preference shares that are convertible, at a stated price, into common shares of the issuer) which trade like equities and commitments to buy or sell equity securities. For non-convertible preference shares and those convertible bonds which trade like debt securities, they should be reported under Part I. Equity derivatives include forwards, futures and swaps on both individual equities and or stock indices. Options should be included subject to the specific instructions set out in Part IV. Long and short positions in the same issue may be reported on a net basis.
36. The positions are to be reported on a market-by-market basis, i.e., under separate columns to indicate the exchange where the reported equities are listed/traded. For foreign markets, banks should indicate the country where the market is located. (Refer to example (9) in Annex A) Equities with listing in more than one market should be reported as positions in the market of their primary listing.
37. Equity derivatives are to be converted into positions in the relevant underlying. Futures and forward contracts relating to an individual equity should be reported at current market values. Futures relating to equity indices can be reported either as the current index value times the monetary value of one index point set by the exchange, i.e., the “tick” value, or the marked-to-market value of the notional underlying equity portfolio. (Refer to example (11) in Annex A).
38. Matched positions in each identical equity or index (same delivery months) in each market may be fully offset, resulting in a single net short or long position. A future in a given equity may be offset against an opposite cash position in the same equity but the interest rate exposure arising out of the equity futures should be reported in Part I. For example, a short futures contract on a specific stock with delivery 3 months from the reporting date can be offset against a long position in the underlying stock. However, the interest rate exposure arising out of the equity futures should be reported as a long position in the “1 to 3 months” time band of the stock denominated currency in Part I. The position should be reported as the current market value of the stock.
39. An equity swap obligates a bank to receive an amount based on the change in value of a particular equity or equity index and also to pay an amount based on the change in value of a different equity or equity index. Accordingly, the receipt side and the payment side of an equity swap contract should be reported as a long and a short position, respectively. For an equity swap contract which involves a leg relating to a financial instrument other than equities or

equity derivatives, for example, receiving/paying a fixed or floating interest rate, the exposure should be slotted into the appropriate maturity band in Part I. Where equities are part of a forward contract (equities to be received or to be delivered), any interest rate exposure from the other leg of the contract should be reported in Part I. The treatment is similar to that set out in paragraph 38. The same arrangement applies for index futures. (Refer to example (11) in Annex A).

40. As with interest rate exposures, the capital charge is levied to separately cover both the specific risk and the general market risk. Calculation is done on an individual market basis. The unadjusted capital charge for specific risk will be 8% on the gross (i.e., long plus short) positions. The unadjusted general market risk charge will be 8% on the net position. Net long and short positions in different markets cannot be offset for the purpose of calculating general market risk charge.

### **Part III Foreign Exchange Exposures**

41. Report in this part the amount in US dollars (USD) of net long or net short position in each currency. The net delta- based equivalent of foreign currency options should also be reported for each currency, subject to the specific instructions in Part IV. In addition, structural positions taken deliberately to hedge against the effects of exchange rate movements on the capital adequacy of the reporting bank may be excluded. This should be cleared with the Bangko Sentral prior to reporting.
42. Net long/(short) position shall refer to FX assets (excluding FX items allowed under existing regulations to be excluded from FX assets in the computation of a bank's net FX position limits) less FX liabilities (excluding FX items allowed under existing regulations to be excluded from FX liabilities in the computation of a bank's net FX position limits), plus contingent FX assets less contingent FX liabilities, including net delta weighted long/ (short) position of options (subject to a separately calculated capital charge for gamma and vega described in Part IV.2). Alternatively, if the bank engages in purchase of options only, the options shall be carved out and reported under Part IV.1. Delta-weighted long and short positions refer to potential purchases and sales of the underlying, respectively. For example, a short put option carries a potential purchase of the underlying, thus will be treated as a long delta-weighted position.
43. Banks which base their normal management accounting of forward currency positions on net present values shall use the net present values of each position, discounted using current interest rates, for measuring their positions. Otherwise, forward currency positions shall be measured based on notional amount.

44. The total USD amount of net long or net short position in each currency should then be converted at spot rates into Philippine peso. The overall net open position is the greater of the absolute value of the sum of net long position or sum of net short position.

45. The unadjusted capital charge will be 8% of the overall net open position.

#### Part IV Options

46. Report in this part the positions of option contracts which are related to the risk categories reported in Parts I to III, using either the Simplified Approach or the Delta Plus Approach.

##### 1. For banks that purchase options only - Simplified Approach

47. Banks will be considered to be engaging only in purchase of options if at any time all their written option positions (if any) are hedged by perfectly matched long positions in exactly the same options. In this case such perfectly matched options need not be reported and only the outstanding long (purchased) options are covered by the following approach.

48. Treatments for purchased options with and without related cash positions are summarized in Table 3 below. The capital charge should be calculated separately for each individual option (together with the related cash position). Banks should then report the sum of the capital charges calculated.

**Table 3**

**Simplified approach: capital charge for purchased options only**

Short cash and Long call or Long cash and Long put	The capital charge will be the market value of the underlying of the option multiplied by the sum of specific and general market risk charges for the underlying less the amount the option is in the money (if any) with the reduced capital charge bounded at zero <sup>4</sup> (Refer to example (10) in Annex A).
Long call or Long put	The capital charge will be the lesser of : a. the market value of the underlying of the option multiplied by the sum of specific and general market risk charges for the underlying; and b. the market value of the option <sup>5</sup>

49. The market risk capital charges to be applied for the purpose of the above paragraph are indicated in Table 4 below:

**Table 4**

Underlying	Specific risk charge	General market risk charge
Debt instrument <sup>6</sup>		As per the risk weights in Table 1, according to the residual maturity (fixed rate) or next repricing (floating rate)
Government and multi-lateral development banks Qualifying (with residual rate maturity)	0.00%	
6 months or less	0.25%	
Over 6 months to 24 months	1.00%	
Over 24 months	1.60%	
LGU bonds	4.00%	
Others	8.00%	
Interest rate (non-debt related)	0.00%	
Equity	8.00%	8.00%
Foreign Exchange	0.00%	8.00%

50. In some cases, such as foreign exchange where it may be unclear which currency is the “underlying” of the option, this should be taken to be the asset which would be received if the option is exercised. In addition, the nominal value should be used for items where the market value of the underlying instrument could be zero, e.g., caps and floors as well as swaptions.

## 2. For banks that write options - Delta Plus Approach

51. Banks that write options (apart from those described in paragraph 47) should report in Parts I to III the relevant delta-weighted positions of all their outstanding options, i.e., the market value of the underlying of the option multiplied by the option delta. The relevant negative gamma and vega sensitivities of these options should be reported in Parts IV.2(a) to IV.2(c) of the Report in order to capture the delta sensitivity and volatility risk of these options. Banks wishing to adopt alternate treatments for their options such as a scenario approach should seek prior approval from the Bangko Sentral.

52. Delta-weighted option positions with debt securities or interest rates as the underlying will be slotted into the interest rate time bands, as set out in Part I.2 of the Report. A two-legged approach should be used as for other derivatives, requiring one entry at the time the underlying contract takes effect and a second at the time the underlying contract matures. In other words the reporting mechanism would be the same as those for the positions in the underlying instruments of the options as presented in Parts I to III, except that the market value of the underlying instruments will be adjusted by the delta ratios of the relevant options for reporting under this approach. For instance:

- a) A bought call option on a June 3- month interest-rate future will in March be considered, on the basis of its delta- equivalent value, to be a long position with a maturity of 6 months and a short position with a maturity of 3 months. The written option will similarly be slotted as a long position with a maturity of three (3) months and a short position with a maturity of six (6) months.
- b) A 2-month purchased call option on a bond future where delivery of the bond takes place in September would be considered in March as being long the deliverable bond and short a 6-month government security in the same currency, both positions being delta-weighted.
- c) Floating rate instruments with caps or floors will be treated as a combination of floating rate securities and a series of European-style options, e.g., the holder of 2- year floating rate security indexed to 6 month LIBOR with a cap of 8% will treat it as:
- i. a debt security that reprices in 6 months; and
  - ii. a series of 3 written call options on a FRA with a reference rate of 8%, each with a negative sign at the time the underlying FRA takes effect and a positive sign at the time the underlying FRA matures. (The rules applying to closely matched positions set out in paragraph 26 will also apply in this respect.) (Refer to example (7) in Annex A).
53. The reporting of options with equities as the underlying will also be based on the delta-weighted positions which will be incorporated in Part II of the Report. For purposes of this calculation, each national market is to be treated as a separate underlying. For options on foreign exchange position, the net delta-based equivalent of the foreign currency options will be incorporated into the measurement of the exposure for the respective currency position. These delta positions will be reported in Part III of the Report.
54. The net negative gamma positions and vega positions of all outstanding options (purchased or written) should also be reported in Part IV.2. This is in addition to the delta positions being reported in Parts I to III.
55. The net negative gamma positions should be reported in the following way:
- a) for each individual option, a “gamma impact” should be calculated by the following formula:

$$\text{Gamma impact} = \frac{1}{2} \times \text{Gamma} \times \text{VU}^2$$

where VU = Variation of the underlying of the option.

b) VU will be calculated as follows:

- for debt and interest rate options of which the delta-equivalent position is reported in Part I, the market value of the underlying or notional underlying multiplied by the risk weights for the appropriate time bands set out in Table 1;
- for options on equities and equity indices, the market value of the underlying multiplied by 8%; and
- for options on foreign exchange, the market value of the underlying multiplied by 8%.

c) For the purpose of this calculation the following positions should be treated as the same underlying:

- for interest rate instruments, each time band as set out in Table 1;
- for equities and equity indices, each national market; and
- for foreign currencies, each currency pair.

Banks with options relating to more underlyings than the space provided should report their positions in additional sheets.

d) Each option on the same underlying will have a gamma impact that is either positive or negative. These individual gamma impacts will be summed, resulting in a net gamma impact for each underlying that is either positive or negative. Only those net gamma impacts that are negative should be reported.

56. The vega charge should be reported in the following way:

a) The vega positions should represent the risk in a proportional shift in volatility of +25% for the underlying. For example, an increase in volatility carries a risk of loss for a short option of which the assumed current (implied) volatility is 20%. With a proportional shift of 25%, the vega position has to be calculated on the basis of an increase in volatility of 5 percentage points from 20% to 25%. If the vega is calculated as 1.68, i.e., a 1% increase in volatility increases the value of the option by 1.68, then the above change in volatility of 5 percentage points will increase the value of the option by 8.4 (1.68 x 5) which represents the vega position to be reported.

b) Each option on the same underlying will have a vega position that is either positive or negative. These individual vega positions will be summed, resulting in a net vega position for each underlying that is either positive or negative. The total vega charge will be the sum of the absolute values of the net vega positions obtained for each underlying.



## Part V Internal Models Approach

57. Only those banks which have obtained the Bangko Sentral's approval to adopt their internal value-at-risk (VaR) models to calculate their market risk capital charges in lieu of the standardized methodology are required to report in this part.

### 1. Value-at-risk results

58. Report in this part the value-at-risk (VaR) results as at the last trading day of the reference quarter in column (a) and the average VaR over the most recent 60 trading days of the reference quarter in column (b), both for each individual market risk category using internal models approach, i.e., item 1.1 to 1.3, and for the aggregate of these risk categories, i.e., item 1.4.

59. Provided that the Bangko Sentral is satisfied with the bank's system for measuring correlations, recognition of empirical correlations across broad risk categories (e.g., interest rates, equity prices and exchange rates, including related options volatilities in each risk factor category) may be allowed. The VaR for the aggregate of all risk categories will therefore not necessarily be equal to an arithmetic sum of the VaR for the individual risk category.

60. Report also in this part the number of backtesting exceptions for the past 250 trading days (from the reference quarter-end going backwards), based on:

- actual daily changes in portfolio value, in item 1.4. column (c), and
- hypothetical changes in portfolio value that would occur were end-of-day positions to remain unchanged during the 1 day holding period, in item 1.4 column (d),

for the aggregate of the broad risk categories.

61. The multiplication factor to be reported in item 1.4 column (e) is the summation of the following 3 elements:

- a) the minimum multiplication factor of 3;
- b) the "plus" factor ranging from 0 to 1 based on the number of backtesting exceptions (i.e., the larger of item 1.4 column (c) or item 1.4 column (d)) for the past 250 trading days as set out in Table 5 below: and
- c) any additional "plus" factor as may be prescribed by the Bangko Sentral.

### Table 5

**“Plus” factor based on the number of backtesting exceptions for the past 250 trading days**

Zone	Number of exceptions	“Plus” factor
Green Zone	0	0.00
	1	0.00
	2	0.00
	3	0.00
	4	0.00
Yellow Zone	5	0.40
	6	0.50
	7	0.65
	8	0.75
	9	0.85
Red Zone	10 or more	1.00

62. Capital charge for general market risk calculated by internal models reported in item 1.6 is larger of:

- a) Item 1.4 column (a), i.e., VaR for the aggregate of all risk categories, as at the last trading day of the reference quarter; or
- b) Item 1.5, i.e., the average VaR for the last 60 trading days of the reference quarter [item 1.4 column (b)] times the multiplication factor [item 1.4 column (e)] set out in paragraph 61 above.

**2. Specific risk**

63. Capital charge for the specific risk of debt securities and other debt related derivatives, and equities and equity derivatives is to be reported using either of the following two methods:

- a) For banks which incorporate the specific risk into their models, report the capital charge for the total specific risk calculated by the models in item 1.7 of Part V.1; or
- b) For banks which do not incorporate the specific risk into their models, report the specific risk of debt securities and other debt related derivatives in Part I.1 according to the instructions in paragraphs 15-19 and 29-30. For equities and equity derivatives, report the specific risk in Part II according to the instructions in paragraphs 35 to 40.

**3. Largest daily losses over the quarter**

64. Report in this part in descending order (i.e., the largest loss first) the 5 largest daily losses over the reference quarter and their respective VaRs for the risk exposures which are measured by the internal models approach. If the number of daily losses during the quarter is less than 5, report only all such daily losses.

#### **Part VI Adjusted Capital Adequacy Ratio**

65. The market risk capital charges should be aggregated and converted to a market risk-weighted exposure. The total market risk capital charges is the sum of the capital charges for individual market risk categories computed using either (a) the standardized approach, or (b) the internal models approach. The total capital charges for individual market risk categories using the standardized approach should be multiplied by 125% (to be consistent with the higher capital charge for credit risk, i.e., ten percent (10%) as opposed to the BIS recommended eight percent (8%).
66. The total market risk-weighted exposure is computed by multiplying the total market risk capital charges by 10. (The multiplier 10 is the reciprocal of the Bangko Sentral required minimum capital ratio for credit risk of 10%). The qualifying capital and total credit risk-weighted exposures are extracted from Part V.A and Part V.B, respectively, of the Report on the Computation of Risk-Based Capital Adequacy Ratio covering credit risk.
67. For on-balance-sheet debt securities and equities in the trading book included in Parts I, II and V of this Report, the credit risk-weighted exposures reported in Part II of the Report on the Computation of the Risk-Based Capital Adequacy Ratio covering credit risk should be excluded in calculating the adjusted ratio covering combined credit risk and market risk. The market risk capital charges for these positions calculated in this Report cover all the capital requirements for absorbing potential losses arising from carrying such positions.

*(Circular Nos. 890 dated 02 November 2015 and 827 dated 28 February 2014)*

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**Annex A**

**Suppose as at 31 December, 200X, ABC Bank Corporation has the following trading book positions:**

1. Long position in US Treasury Bond (7.5% annual coupon) with face value equivalent to PHP507.000MM and residual maturity of 8 years. Market value based on quoted price: PHP518.914MM equivalent

2. Long position in an unrated floating rate note (6.25% current annual coupon) issued by a US corporate with face value equivalent of PHP260.000MM and next repricing 9 months after. Market value based on quoted price: PHP264.758MM equivalent
3. Long 10 futures contracts involving 5-year US Treasury Note (face value USD0.100MM per contract) for delivery 3 months after. Selected deliverable: US Treasury Note (coupon 6.375%) maturing 5.25 years, current price at 100.0625, conversion factor 0.9423.
4. Single currency interest rate swap with face value PHP975.000MM and residual maturity of 2.5 years, bank receives annual floating rate interest and pays fixed at 8% per annum. The current floating rate is fixed at 5.5% with next repricing after 6 months.
5. Long 10 futures contracts involving 3-month LIBOR interest rate (face value GBP6.500MM per contract) for delivery 6 months after.
6. An FRA sold on 6-month PHIBOR with nominal amount PHP130.000MM and settlement date 9 months after.
7. A GBP2.000MM 2 year cap written on GBP 6 month LIBOR at cap rate 8%, next repricing after 6 months and remaining maturity 2 years (i.e., the cap is written on the reporting date).
8. Forward foreign exchange position of EUR5.000MM (long) against PHP250.000MM equivalent maturing in 3 months.
9. Long 1000 shares of a US listed company with current market price of PHP715.000MM equivalent.
10. Long 50,000 shares of a Philippine listed company hedged by a long position in 25 put option contracts (each contract represents 1,000 shares) for the same share. The current market price for the share is PHP195.00 and the exercise price of all the option contracts is PHP214.50.
11. Short one Hang Seng Index Futures for delivery 3 months after, current index at 10,000.
12. Currency swap with residual maturity of 6 months. Bank receives USD19.500MM at 9.5% per annum and pays PHP975.000MM at 11% per annum.

**Treatments:**

1. Report market value (PHP518.914MM) of the long position in Part I.1, item I.2 and Part I.2, USD

ladder, 7 to 10 years time band.

2. Report market value (PHP264.758MM) of the long position in Part I.1, item 1.9' and Part I.2, USD ladder, 6 to 12 months time band.
3. Report selected Treasury Note (long position) in Part I.1, item I.2 and Part I.2, USD ladder, 5 to 7 year time band. Report the same amount in short position, 1 to 3 months time band.

Assume spot exchange rate PHP50.00

Amount to be reported:

$USD0.100MM \times 10 \times 100.0625\% / 0.9423$

= USD1.062MM

= P53.095MM

4. Report the fixed rate leg as a short 2.5-year bond in Part I.2, Peso ladder, 2 to 3 years time band. Report the floating rate leg as a long 6 months security in the 3 to 6 months time band.

Assume the Peso zero coupon yields are as follows:

Period	Zero Coupon (ZC)
1M	5.31
3M	5.63
6M	5.81
1Y	6.16
2Y	6.69
3Y	7.07

(Zero coupon yields within 1 year can be taken as cash rates, i.e., PHIBOR, zero coupon yields beyond 1 year can be constructed from, say, swap rates.)

Cash flows of Peso swap: 2 legs

Pay – fixed rate bond

8% of PHP975.000MM in 6 months

8% of PHP975.000MM in 18 months

108% of PHP975.000MM in 30 months

Receive - floating rate paper

105.5% of PHP975.000MM in 6 months

Zero-coupon rates at 18 months can be obtained from the linear interpolation between the 1Y and 2Y zero coupon rates.

$$\text{ZC (18 months)} = (6.16\% + 6.69\%)/2 = 6.425\%$$

Similarly,

$$\text{ZC (30 months)} = (6.69\% + 7.07\%)/2 = 6.88\%$$

PV of the fixed leg (i.e., pay side)

$$\begin{aligned} &= \text{PHP}975.000\text{MM} \quad \times \quad \frac{0.08}{(1+0.0581 \times 0.5)} \quad + \quad \frac{0.08 + 1.08}{(1+0.06425)^{1.5}} \\ &\quad + \quad \frac{1.08}{(1+0.0688)^{2.5}} \end{aligned}$$

$$= \text{PHP}1,038.479\text{MM}$$

PV of the floating leg (i.e. receive side)

$$= \text{PHP}975.000\text{MM} \quad \times \quad \frac{1.055}{(1+0.0581 \times 0.5)}$$

$$= \text{PHP}999.587\text{MM}$$

5. Report a long 9 months zero coupon security in Part I.2, GBP ladder, 6 to 12 months time band and a short 6 months zero coupon security in 3 to 6 months time band.

Assume the GBP 6 months zero-coupon yield is 6.74% while the interpolated 9 months zero-coupon yield is 6.87%.

Assume spot exchange rate is PHP75.00.

Amount to be reported:

$$\begin{aligned} \text{9 months} &= \text{GBP}65.000\text{MM} / (1+0.0687 \times 0.75) \\ &= \text{GBP}65.000\text{MM} \times 0.951 \\ &= \text{PHP}4,636.124\text{MM equivalent} \end{aligned}$$

$$\begin{aligned}
 \text{6 months} &= \text{GBP}65.000\text{MM} / (1 + 0.0674 \times 0.5) \\
 &= \text{GBP}65.000\text{MM} \times 0.9674 \\
 &= \text{PHP}4,716.069\text{MM equivalent}
 \end{aligned}$$

6. Report a long 15 months zero coupon security in Part I.2, Peso ladder, 1.0 to 1.9 years time band and a short 9 months zero coupon security in 6 to 12 months time band.

Calculations similar to (4) above,

$$\begin{aligned}
 \text{ZC (15 months)} &= 6.16\% + (6.69\% - 6.16\%) \times 0.25 \\
 &= 6.2925\% \\
 \text{15 months} &= \text{PHP}130.000\text{MM} (1 + 0.062925)^{1.25} \\
 &= \text{PHP}121.000\text{MM} \\
 \text{9 months} &= \text{PHP}130.000\text{MM} \times 0.957 \\
 &= \text{PHP}124.410\text{MM}
 \end{aligned}$$

7. Report the cap as 3 written call options on 6-month FRA, i.e., 6 against 12, 12 against 18 and 18 against 24. (The rate for the first 6 months is already set on the reporting date, i.e., the option already expires.)

Assume the delta ratios of the options are:

6 against 12	0.055
12 against 18	0.17
18 against 24	0.225

Assume the discounting factors are:

6 months	0.09674
12 month	0.9346
18 month	0.9009
24 month	0.8673

Assume spot exchange rate is PHP75.00

Report in Part I.2 GBP ladder:

For the first option -

$$\begin{aligned}
 &\text{A long position in the 6 to 12 months time band} \\
 &= \text{GBP}2.000\text{MM} \times 0.055 \times 0.9346 \\
 &= \text{PHP}7.710\text{MM equivalent}
 \end{aligned}$$

A short position in the 3 to 6 months time band

$$\begin{aligned}
 &= \text{GBP}2.000\text{MM} \times 0.055 \times 0.9674 \\
 &= \text{PHP}7.981\text{MM equivalent}
 \end{aligned}$$

For the second option -

A long position in the 1.0 to 1.9 years time band  
 = GBP2.000MM x 0.17 x 0.9009  
 = PHP22.973MM equivalent

A short position in the 6 to 12 months time band

= GBP2.000MM x 0.17 x 0.9346  
 = PHP23.832MM equivalent

For the third option -

A long position in the 1.9 to 2.8 years time band  
 = GBP2.000MM x 0.225 x 0.8673  
 = PHP29.271MM equivalent

A short position in the 1.0 to 1.9 years time band  
 = GBP2.000MM x 0.225 x 0.9009  
 = PHP30.405MM equivalent

(For simplicity, Part III of the report is not presented in this example.)

8. Report a long three (3) months zero coupon security in Part I.2, EUR ladder, one (1) to three (3) months time band and a short three (3) months

Calculation similar to (4) above and assume three (3) months EUR cash rate at 3.25% and spot exchange rate is PHP46.00.

EUR = EUR5.000MM/(1 + 0.0325 x 0.25)  
 = PHP228.146MM equivalent

PHP = PHP250.000MM/(1+ 0.0563 x 0.25)  
 = PHP246.530MM

(For simplicity, Part III of the report is not presented in this example.)

9. Report market value in Part II, item 1 (US column).

10. Report as a long position the market value for 25,000 shares (PHP4.875MM) in Part II, Item 1 (Philippine column).

Report 25,000 shares covered by put option in Part IV.1 (a), item 2

Amount to be reported

= (25,000 x PHP195.00 x 16%) -  
 {25,000 x (PHP214.50 - PHP195.00)}  
 = PHP0.293MM



11. Report as a short position the market value for futures (HKD50.00 per index point) in Part II, item 5 (HKD column) and as a long position in Part I.2, HKD ladder, 1 to 3 months time band. Assume HKD to PHP exchange rate is PHP6.50.
12. Report the USD leg as a long 6- month zero coupon security in Part I.2, USD ladder, 3 to 6 months time band. Report the PHP leg as a short 6-month zero coupon security in Part I.2, PHP ladder, 3 to 6 months time band.

Assume the 6-month Peso and Dollar zero coupon yields are 5.81% and 4%, respectively, and the spot exchange rate is PHP50.00.

Cash flows of currency swap: two legs

Pay – PHP

111% of PHP975.000MM in 6 months

PV of PHP leg

$$\begin{aligned}
 &= \frac{\text{PHP}975.000\text{MM} \times (1.11)}{(1 + 0.0581 \times 0.5)} \\
 &= \text{PHP}1,051.700\text{MM}
 \end{aligned}$$

Receive – USD

109.5% of USD19.500MM in 6 months

PV of USD leg

$$\begin{aligned}
 &= \frac{\text{USD}19.500\text{MM} \times (1.095)}{(1+0.04 \times 0.5)} \\
 &= \text{PHP}1,046.700\text{MM equivalent}
 \end{aligned}$$

#### Footnotes

1. “Government and multilateral development banks” refers to the issuers as described under items 1.1 and 1.3 in Part I.1 of the Report.
2. “Qualifying” refers to the issuers/issues as described under items 1.4 to 1.7 in Part I.1 of the Report.
3. “LGU bonds” refers to bonds issued by local government units (LGUs), covered by Deed of Assignment of Internal Revenue Allotment of the LGU and guaranteed by LGU Guarantee Corporation.
4. For options with a residual maturity of more than 6 months, the strike price should be compared with the forward, not current, price. A bank unable to do this must take the in the money amount to be zero.
5. Where the position does not fall within the trading book (i.e., options on certain foreign exchange position not belonging to the trading book), it is acceptable to use the book value instead.
6. Issuer/issues classifications as per Part I.1 of the Report.