



**GUIDANCE NOTE ON COMPUTATION OF CAPITAL CHARGE FOR MARKET  
RISK FOR BANKS AND FINANCIAL INSTITUTIONS, 2023**

**BANK OF TANZANIA**

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## **1. INTRODUCTION**

1. Market risk is the risk of losses in on and off balance sheet positions as a result of adverse changes in market prices i.e. interest rates, foreign exchange rates, equity prices and commodity prices.
2. These guidelines address determination of minimum capital requirements for Market risk that will serve as the Pillar 1 minimum capital requirement, according to the Simplified standardised approach issued by Basel Committee on Banking Supervision in January 2019.
3. For interest rates, equity prices and commodity prices risks determination for capital charge shall apply to instruments in the trading book, while foreign exchange risk capital charge shall apply to instruments in both trading and banking books.

## 2. BOUNDARY BETWEEN THE BANKING BOOK AND THE TRADING BOOK

4. A trading book consists of financial instruments and foreign exchange (FX). 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 primary financial instruments (or cash instruments) and derivative financial instruments. A financial asset is any asset that is cash, the right to receive cash or another financial asset or a commodity, or an equity instrument. A financial liability is the contractual obligation to deliver cash or another financial asset.
5. All other instruments that do not fall under items prescribed in **paragraph 4** shall be included in the banking book.
6. Banks and financial institutions may only include a financial instrument and instruments on FX in the trading book when there is no legal impediment against selling or fully hedging it.
7. Banks and financial institutions shall fair value their trading book instrument daily and recognize any valuation change in the profit and loss (P&L) account.
8. Any financial instrument or instrument on FX a bank or financial institution holds for one or more of the following purposes shall, when it is first recognized on its books, be designated as a trading book instrument:
  - (i) short-term resale;
  - (ii) profiting from short-term price movements;
  - (iii) locking in arbitrage profits; or
  - (iv) hedging risks that arise from instruments meeting (i), (ii) or (iii) above.
9. Any financial instrument or instrument on FX which is not held for any of the purposes listed in **paragraph 8** shall be assigned to the banking book. The following instruments must be assigned to the banking book:
  - (i) unlisted equities;
  - (ii) real estate holdings, where in the context of assigning instrument to the trading book, real estate holdings relate only to direct holdings of real estate as well as derivatives on direct holdings;
  - (iii) Loans, advances and overdrafts;
  - (iv) Equity investments in a fund, unless the bank or financial institution meets at least one of the following conditions:
    - (a) the bank or financial institution is able to look through the fund to its individual components and there is sufficient and frequent information, verified by an independent third party, provided to the bank regarding the fund's composition; or
    - (b) the bank or financial institution obtains daily price quotes for the fund and it has access to the information contained in the fund's mandate or in the national regulations governing such investment funds;

- (v) Hedge funds;
  - (vi) Derivative instruments and funds that have the above instrument types as underlying assets; or
  - (vii) Instruments held for the purpose of hedging a particular risk of a position in the types of instrument above.
10. The Bank may require a bank or financial institution to provide evidence that an instrument in the banking book is not held for any of the purposes of paragraph 8.
11. There is a general presumption that any of the following instruments are being held for at least one of the purposes listed in **Paragraph 8** and therefore are trading book instruments, unless specifically otherwise provided for in **paragraph 6 or 9**:
- (i) Instruments held as accounting trading assets or liabilities<sup>1</sup>;
  - (ii) Instruments resulting from market-making activities;
  - (iii) Equity investments in a fund excluding those assigned to the banking book;
  - (iv) Listed equities<sup>2</sup>;
  - (v) Trading-related repo-style transaction; or
  - (vi) Options including embedded derivatives from instruments that the institution issued out of its own banking book and that relate to credit or equity risk.
12. With prior approval of the Bank, a bank or financial institutions may deviate from the presumptive list specified in paragraph 11 provided that the bank or financial institutions provides evidence that the instrument is not held for any of the purposes in paragraph 8.
13. Notwithstanding the process established in paragraph 12 for instruments on the presumptive list, the supervisor may require the bank to provide evidence that an instrument in the trading book is held for at least one of the purposes of paragraph 8.
14. A bank or financial institution shall not move instruments between the trading book and the banking book after initial designation without prior approval of the Bank.
15. A bank or financial institution shall put in place clearly defined policies and procedures for determining which instruments to include in or to exclude from the trading book for the purposes of calculating their regulatory capital, ensuring compliance with the criteria set forth in this guidance, and taking into account the bank or financial institution's risk management capabilities and practices. A bank or financial institution's internal control functions must conduct an ongoing evaluation of instruments both in and out of the trading book to assess whether its instruments are being properly designated initially as trading or non-trading instruments in the context of the bank or financial institution's trading

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<sup>1</sup> Under IFRS (IAS 39) and US GAAP, these instruments would be designated as held for trading. Under IFRS 9, these instruments would be held within a trading business model. These instruments would be fair valued through the P&L account.

<sup>2</sup> Repo-style transactions that are (i) entered for liquidity management and (ii) valued at accrual for accounting purposes are not part of the presumptive list.

activities. Compliance with the policies and procedures must be fully documented and subject to periodic (at least yearly) internal audit and the results must be available for supervisory review.

### 3. APPLICATION OF MARKET RISK

16. A bank or financial institution shall measure and apply capital charges in respect of market risk using Simplified Standardized Approach as prescribed in these guidelines.
17. No FX risk capital requirement need apply to positions related to items that are deducted from a bank or financial institution's capital when calculating its capital base.
18. Holdings of capital instruments that are deducted from a bank's or financial institution's capital or risk weighted at 833% are not allowed to be included in the market risk framework. This includes:
  - (i) holdings of the bank's or financial institution's own eligible regulatory capital instruments; and
  - (ii) holdings of other banks, securities firms' and other financial entities' eligible regulatory capital instruments, as well as intangible assets that are deducted from capital.
  - (iii) Where a bank or financial institution demonstrates that it is an active market-maker, then the Bank may establish a dealer exception for holdings of other banks', securities firms', and other financial entities' capital instruments in the trading book. In order to qualify for the dealer exception, the bank or financial institution shall have adequate systems and controls surrounding the trading of financial institutions' eligible regulatory capital instruments.
19. In the same way as for credit risk and operational risk, the capital requirements for market risk shall apply on solo and consolidated basis.
20. A bank or financial institution may be exempted from allocating capital for market risk if its:
  - (a) Volume of balance sheet and off-balance sheet positions in the trading book amounts to less than 5% of total assets at any given time.
  - (b) However, these trading positions are subject to applicable risk weights under the credit risk framework.

#### 4. SIMPLIFIED STANDARDISED APPROACH

21. The capital charge for market risk under Simplified Standardized Approach is the simple sum of the recalibrated capital requirements arising from each of the Basel II risk classes, namely interest rate risk, equity risk, and foreign exchange risk as detailed in the formula below<sup>3</sup>:

$$\text{Capital charge for market risk} = \text{CR}_{\text{IRR}} \times \text{SF}_{\text{IRR}} + \text{CR}_{\text{EQ}} \times \text{SF}_{\text{EQ}} + \text{CR}_{\text{FX}} \times \text{SF}_{\text{FX}}$$

*Where:*

CR <sub>IRR</sub>	=	Capital Requirement for Interest Rate Risk
SF <sub>IRR</sub>	=	Scaling Factor for Interest Rate Risk
CR <sub>EQ</sub>	=	Capital Requirement for Equity Risk
SF <sub>EQ</sub>	=	Scaling Factor for Interest Equity Risk
CR <sub>FX</sub>	=	Capital Requirement for Foreign Exchange Risk
SF <sub>FX</sub>	=	Scaling Factor for Foreign Exchange Risk

Banks and financial institutions shall apply a multiplier (Scaling Factor SF) to the capital requirements (CR) in each risk class namely, interest rate risk (IRR), equity risk (EQ), and foreign exchange risk (FX). The multipliers (scaling factors) to be applied are as follows.

	Multiplier
General and specific interest rate risk	1.30
General and specific equity risk	3.50
FX	1.20

##### 4.1 Interest rate risk

22. Computation of capital charge for interest rate risk under simplified standardized approach shall involve measuring the risk of holding or taking positions in debt securities and other interest rate related instruments in the trading book. The instruments covered include all fixed-rate and floating-rate debt securities and instruments that behave like them, including non-convertible preference shares. Convertible bonds, i.e. debt issues or preference shares that are convertible, at a stated price, into common shares of the issuer, will be treated as debt securities if they trade like debt securities and as equities if they trade like equities.
23. The minimum capital requirement for interest rate risk shall consist of two parts namely, specific risk of each security, whether it is a short or a long position, and interest rate risk in the portfolio (general market risk) where long and short positions in different securities or instruments shall be offset.

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<sup>3</sup> Capital charge for commodity risk has been excluded in the computation of capital charge for market risk due to non-existence of commodity instruments in the market.

## 4.2 Specific interest rate risk

24. The capital requirement for specific risk is designed to protect against an adverse movement in the price of an individual security owing to factors related to the individual issuer.
25. In measuring the risk, offsetting will be restricted to matched positions in the identical issue (including positions in derivatives). Even if the issuer is the same, no offsetting will be permitted between different issues since differences in coupon rates, liquidity, call features, etc. mean that prices may diverge in the short run.
26. The specific risk capital requirements for different categories of debt securities and other interest rate related instruments will be as follows:

<b>Categories</b>	<b>External credit assessment</b>	<b>Remaining Maturity</b>	<b>Specific risk capital requirement</b>	
Government of URT	Any	Any	0%	
RGoZ	Any	Any	0%	
Other Central Governments	AAA to AA-	Any	0%	
		A+ to BBB-	6 months or less	0.25%
			6 to 24 months	1.00%
	BB+ to B-	Over 24 months	1.60%	
		Any	8.00%	
		Below B-	12.00%	
	Unrated	8.00%		
Qualifying	Investment Grade	6 months or less	0.25%	
		6 to 24 months	1.00%	
		Over 24 months	1.60%	
Other	BB+ to BB-	Any	8.00%	
	Below BB-	Any	12.00%	
	Unrated	Any	8.00%	

27. The government category will include all forms of government paper including bonds, treasury bills and other short-term instruments.
28. The qualifying category includes securities issued by public sector entities and multilateral development banks, plus other securities that are:
- (i) rated investment grade (IG)<sup>4</sup> by at least two credit rating agencies specified by the national authority; or
  - (ii) rated IG by one rating agency and not less than IG by any other rating agency specified by the Bank (subject to supervisory oversight); or

<sup>4</sup> For example, IG include rated Baa or higher by Moody's and BBB or higher by Standard and Poor's

- (iii) subject to supervisory approval, unrated, but deemed to be of comparable investment quality by the reporting bank or financial institution, and the issuer has securities listed on a recognised stock exchange.

### 4.3 General interest rate risk

29. The capital requirements for general interest rate risk are designed to capture the risk of loss arising from changes in market interest rates. Banks and financial institutions shall apply maturity method in computing capital charge for general interest rate risk. The capital requirement is the sum of the following four components:
- (i) the net short or long position in the whole trading book;
  - (ii) a small proportion of the matched positions in each time band (vertical disallowance); and
  - (iii) a larger proportion of the matched positions across different time bands (horizontal disallowance).
30. In the maturity method, long or short positions in debt securities and other sources of interest rate exposures including derivative instruments, are slotted into a maturity ladder comprising 13 time-bands (or 15 time-bands in the case of low coupon instruments). Fixed rate instruments should be allocated according to the residual term to maturity and floating-rate instruments according to the residual term to the next repricing date. Opposite positions of the same amount in the same issues (but not different issues by the same issuer), whether actual or notional, can be omitted from the interest rate maturity framework, as well as closely matched swaps, forwards, futures and forward rate agreements (FRAs) which meet the conditions set out in **paragraphs 26**.
31. Banks and financial institutions may exclude from the interest rate maturity framework altogether (for both specific and general market risk) long and short positions (both actual and notional) in identical instruments with exactly the same issuer, coupon, currency and maturity. A matched position in a future or forward and its corresponding underlying may also be fully offset and thus excluded from the calculation.
32. The first step in the calculation is to weight the positions in each time band by a factor designed to reflect the price sensitivity of those positions to assumed changes in interest rates. The weights for each time band are set out in table below. Zero-coupon bonds and deep-discount bonds (defined as bonds with a coupon of less than 8%) should be slotted according to the time bands set out in the second column of table below.

<b>Coupon 8% or more</b>	<b>Coupon less than 8%</b>	<b>Risk Weight</b>
≤ 1 month	≤ 1 month	0.00%
1 - 3 months	1 - 3 months	0.20%
3 - 6 months	3 - 6 months	0.40%
6 - 12 months	6 - 12 months	0.70%
1 - 2 years	1.0 - 1.9 years	1.25%
2 - 3 years	1.9 - 2.8 years	1.75%
3 - 4 years	2.8 - 3.6 years	2.25%
4 - 5 years	3.6 - 4.3 years	2.75%
5 - 7 years	4.3 - 5.7 years	3.25%
7 - 10 years	5.7 - 7.3 years	3.75%
10 - 15 years	7.3 - 9.3 years	4.50%
15 - 20 years	9.3 - 10.6 years	5.25%
Over 20 years	10.6 - 12 years	6.00%
	12 - 20 years	8.00%
	Over 20 years	12.50%

33. The next step in the calculation is to offset the weighted longs and shorts in each time band, resulting in a single short or long position for each band. Since, however, each band would include different instruments and different maturities, a 10% capital requirement to reflect basis risk and gap risk 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 TZS 100 million and the sum of the weighted shorts TZS 90 million, the so-called vertical disallowance for that time band would be 10% of TZS 90 million (i.e. TZS 9 million).
34. The result of the above calculations is to produce two sets of weighted positions, the net long or short positions in each time band (TZS 10 million long in the example above) and the vertical disallowances, which have no sign.
- (i) Banks and financial institutions will be allowed to conduct two rounds of horizontal offsetting:
    - (a) first between the net positions in each of three zones; and
    - (b) subsequently between the net positions in the three different zones.
  - (ii) The offsetting shall be subject to a scale of disallowances expressed as a fraction of the matched positions, as set out in the table below. The weighted long and short positions in each of three zones shall be offset, subject to the matched portion attracting a disallowance factor that is part of the capital requirement. The residual net position in each zone shall be carried over and offset against

opposite positions in other zones, subject to a second set of disallowance factors.

Zone	Time band	Within the zone	Between adjacent zones	Between zones 1 and 3
Zone 1	0 to 1 month	40%	40%	100%
	1 to 3 months			
	3 to 6 months			
	6 to 12 months			
Zone 2	1 to 2 years	30%	40%	
	2 to 3 years			
	3 to 4 years			
	4 to 5 years			
Zone 3	5 to 7 years	30%	40%	
	7 to 10 years			
	10 to 15 years			
	15 to 20 years			
	Over 20 years			

#### 4.4 Equity risk

35. Equity risk is the risk of holding or taking positions in equities in the trading book. It applies to long and short positions in all instruments that exhibit market behaviour similar to equities. Long and short positions in the same issue may be reported on a net basis. The instruments covered include common stocks (whether voting or non-voting), convertible securities that behave like equities, and commitments to buy or sell equity securities.

#### 4.5 Specific and general equity risks

36. As with debt securities, the minimum capital standard for equities is expressed in terms of two separately calculated capital requirements for the specific risk of holding a long or short position in an individual equity and for the general market risk of holding a long or short position in the market as a whole.

37. Specific risk is defined as the bank's or financial institution's gross equity positions (i.e. the sum of all long equity positions and of all short equity positions) and general market risk as the difference between the sum of the longs and the sum of the shorts (i.e. the overall net position in an equity market). The long or short position in the market shall be calculated on a market-by-market basis, i.e. a separate calculation has to be carried out for each national market in which the bank or financial institution holds equities.

38. The capital requirement for specific risk and for general market risk will each be 12%.

#### **4.6 Foreign exchange (FX) risk**

39. Foreign exchange (FX) risk is the risk of holding or taking positions in foreign currencies, including gold. There are two processes to calculate capital requirement for FX risk.

- (i) The first is to measure the exposure in a single currency position.
- (ii) The second is to measure the risks inherent in a bank's or financial institution's mix of long and short positions in different currencies.

#### **4.7 Measuring the exposure in a single currency**

40. The bank's or financial institution's net open position in each currency should be calculated by summing:

- (i) The net spot position (i.e. All asset items less all liability items, including accrued interest, denominated in the currency in question);
- (ii) Undelivered spot sales;
- (iii) The net forward position (i.e. All amounts to be received less all amounts to be paid under forward fx transactions, including currency futures and the principal on currency swaps not included in the spot position);
- (iv) Currency swaps;
- (v) Guarantees (include those foreign exchange risk is not transferred to customers at settlement date)
- (vi) Letters of credit (include those foreign exchange risk is not transferred to customers at settlement date);
- (vii) any other item representing a profit or loss in foreign currencies; and
- (viii) Other off-balance sheet items.

41. Forward currency and gold positions shall be valued at current spot market exchange rates.

#### **4.8 Foreign exchange risk in portfolio of foreign currency positions and gold**

42. The nominal amount (or net present value) of the net position in each foreign currency and in gold shall be converted to Tanzania Shilling at the prevailing spot mid-rate. The overall net open position is measured by aggregating:

- (i) the sum of the net short positions or the sum of the net long positions, whichever is the greater; plus
- (ii) the net position (short or long) in gold, regardless of sign.

43. The capital requirement will be 12% of the overall net open position.

## **5. GENERAL PROVISIONS**

44. Capital charge for market risk shall be multiplied by the reciprocal of the minimum total capital adequacy ratio of 12 percent and added to the sum of Risk Weighted Assets.
45. Banks and financial institutions shall submit to the Bank a report on capital charge for market risk in the manner and frequency prescribed by the Bank.