Risk Based Capital Adequacy (BASEL-III)

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CAPITAL ADEQUACY means
maintaining ENOUGH CAPITAL as a cushion for
relevant risks (**unexpected loss**) of a bank
in terms of **REGULATORY GUIDELINES**.

BASEL ACCORDS **(I, II III)** are the
basis of Capital Adequacy guidelines which
provide **Global REGULATORY FRAMEWORK**
for Risk Management.

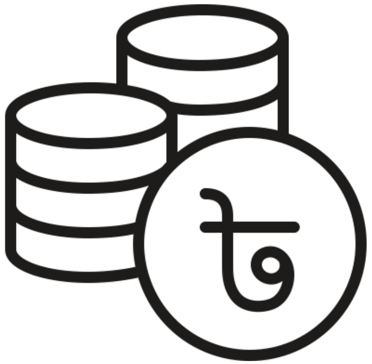
Capital Adequacy – to define

Defined as the **Minimum Level of Capital Required** as per guidelines of the Regulator (Central Bank)

- To **Protect A Bank** from **Portfolio Losses**, and
- To **Safeguard** the **Depositors Interest**.

- Not only **The Level of Required Capital**, but also the **Components Of Eligible Capital** are also defined by the regulator for capital adequacy .

Capital Adequacy – to define



Capital adequacy, in short, is –

Maintaining Adequate Regulatory Capital

which is the **key measure** of the

soundness and stability of Banks.

Adequate Capital – 2 compenents

1

Minimum Capital Requirement

for **3** risks under

Pillar 1 of Basel III

2

Additional Capital Requirement

for **10** more Risks/ Risk factors

under pillar2 of Basel III

Capital Adequacy why needed ?

For Regulators

To **PROTECT THE DEPOSITORS** money – from bad investment and loss.

To ensure **REGULATORY COMPLIANCE**

For Banks

To ensure **SMOOTH FUNCTIONING** of bank with **regulatory compliance**

To **attract confidence of** – Investor, Depositor, Lender, & other Stakeholders

To keep **employees' moral up**.

Brief History of Basel Accords

Basel Accords are the
INTERNATIONALLY ACCEPTED **CAPITAL ADEQUACY STANDARDS**

- issued by Basel Committee on Banking Supervision(**BCBS**),
- housed at the Bank for International Settlements (**BIS**),
- situated in the **BASEL City of Switzerland**

latest version

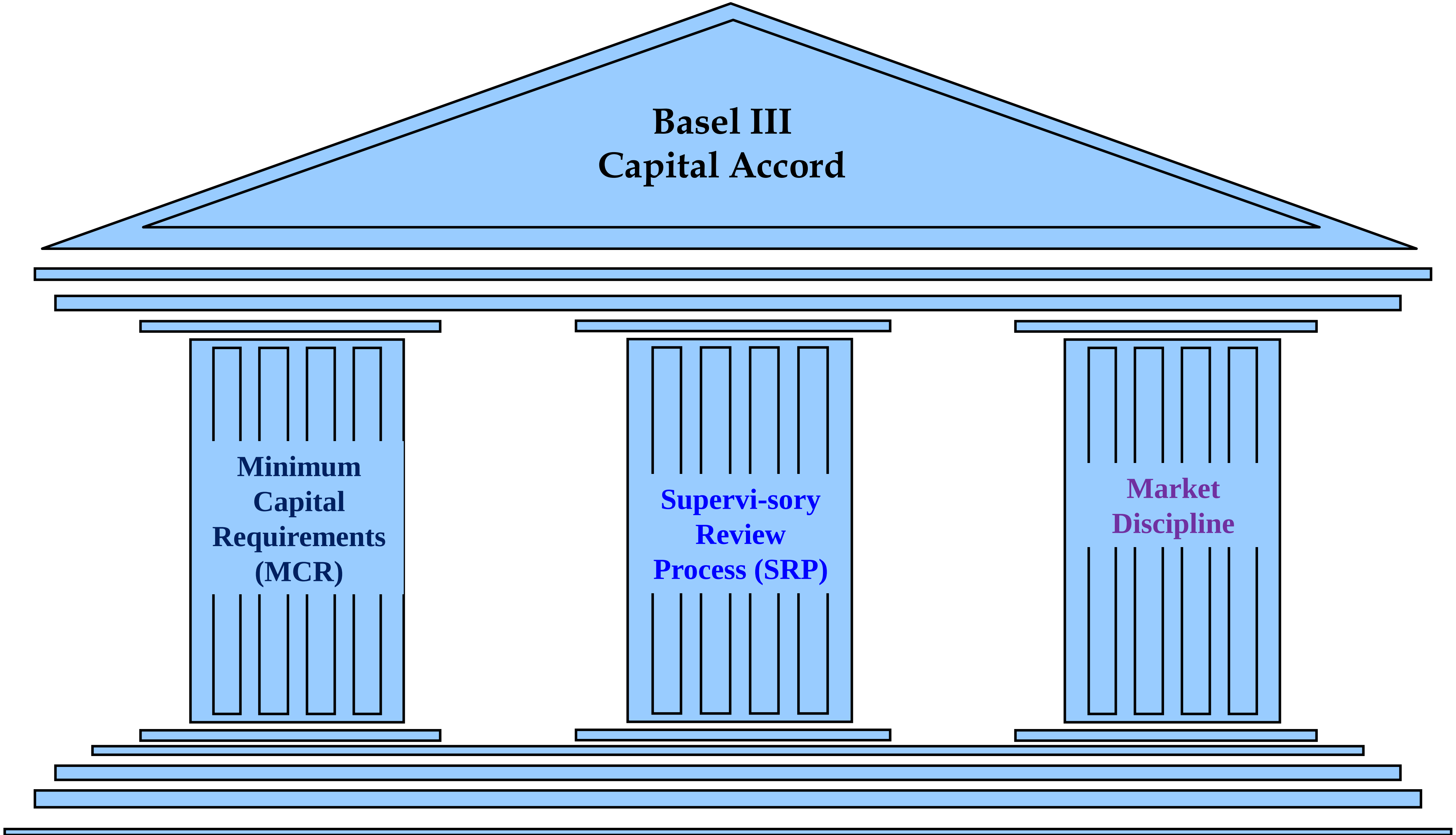
BASEL I	BASEL II	**BASEL III**
1988	2004	2010

BASEL Accords in Bangladesh

Adoption in Bangladesh

BASEL I	BASEL II	**BASEL III**
1996	2009	2015

Basel III: Capital Adequacy Framework



Comparisons of BASEL Accords

BASEL I

Pillar 1

Minimum Capital for

Credit Risk

Pillars ≈ Guidelines

Comparisons of BASEL Accords

BASEL II

3 Pillars

Pillar 1	Minimum Capital for: Credit Risk, Market Risk, Operational Risk
Pillar 2	Supervisory Review
Pillar 3	Market Discipline

Pillars ≈ Guidelines

Comparisons of BASEL Accords

BASEL III

3 Pillars

Pillar 1

Minimum Capital for

Credit Risk

Market Risk

These 3 Pillars

Pillar 2

Supervisory Review

Pillar 3

Market Discipline

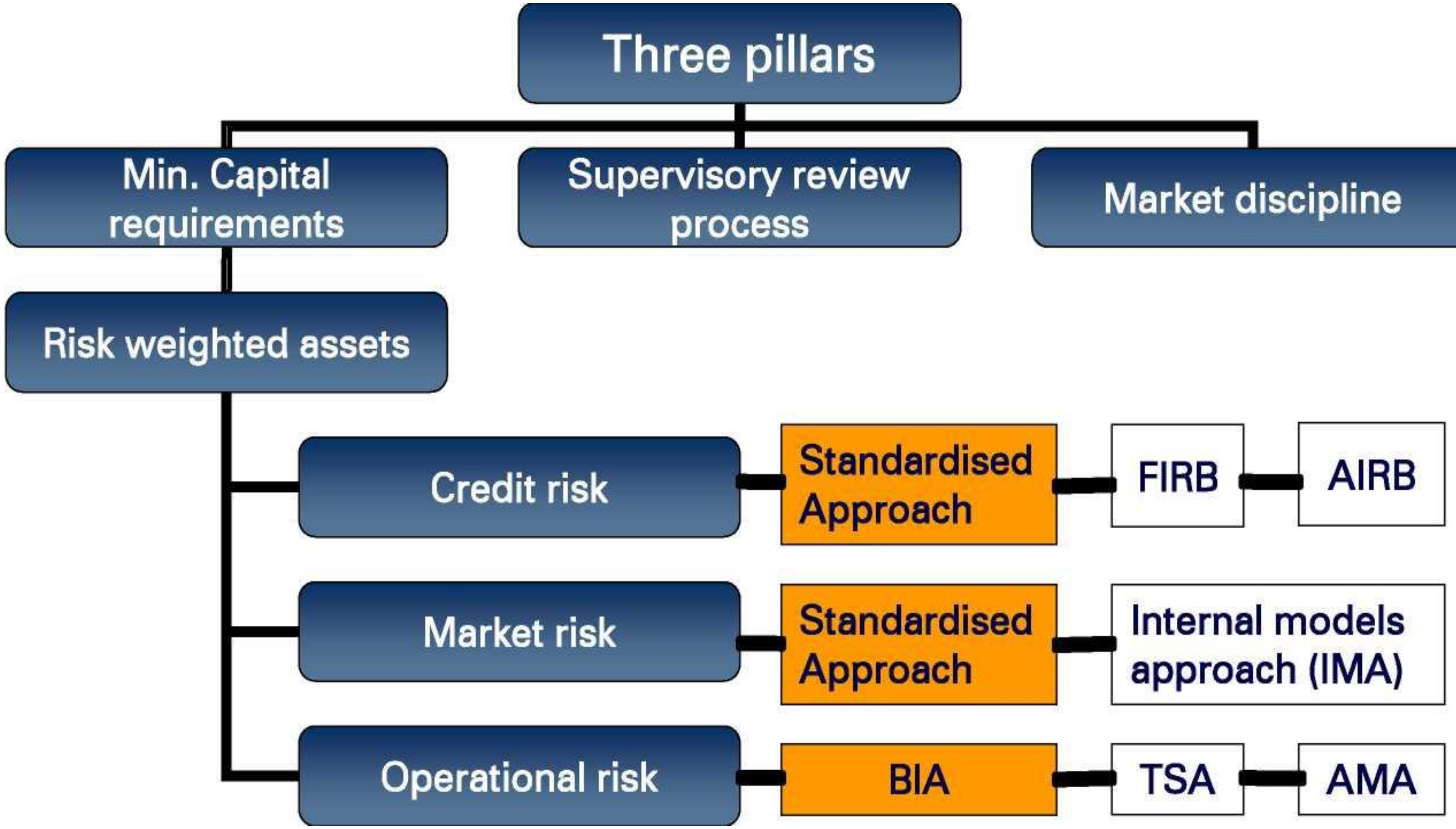
Comparisons of BASEL Accords

BASEL III

These 3 Pillars

Enhanced Quality Capital
New Liquidity Standards

Approaches for **assessment of** MINIMUM CAPITAL REQUIREMENT (MCR) under pillar 1



FIRB = Foundation Internal Rating Based

AIRB = Advanced Internal Rating Based

BIA = Basic Indicator Approach

TSA = The Standardized Approach

AMA = Advanced Management Approach

New Features in BASEL-III

- New **Definition** of Capital
- Capital Conservation Buffer. (**CCB**)
- Leverage Ratio. (**LR**)
- Liquidity Coverage Ratio (**LCR**).
- Net Stable Funding Ratio (**NSFR**).
- Countercyclical Capital Buffer (**CCB**).
- Domestic Systemically Important Banks (**DSIBs**).

Components of Capital

Tier-1 Capital

Common Equity Tier-1 (CET1) Going Concern Capital

1. Paid-up capital
2. Share Premium
3. Statutory reserves
4. General Reserve
5. Retained Earnings
6. Minority Interest

Additional Tier-1 (AT1) capital

1. Perpetual Debt Instruments
2. Perpetual Non-Cumulative Preference Shares (PNCPS)

*Subject to regulatory adjustments and limits

Components of Capital

Tier-2 Capital

1. Subordinated debt
2. General Provisions
3. Other Preference Shares
4. Revaluation reserves

*Subject to regulatory adjustments and limits

Regulatory Adjustments

Common Equity Tier -1

1. Short Fall Provision
2. Goodwill & intangible assets
3. Deferred Tax Asset (DTA)

Additional Tier 1

Reciprocal Cross Holdings

Tier – 2

Revaluation Reserves
Investments excess of limit
Investment in subsidiary – not consolidated

Measures of Capital Adequacy: Chief Measures

Measures	What they mean	Minimum Requirement
CRAR	$= \frac{Tier\ 1\ Capital + Tier\ 2\ Capital}{Risk\ Weighted\ Asset}$	**10%,** both at SOLO & Consolidated level. Tier-1 = **6%**, Tier-2 = **4%**
Leverage Ratio	$= \frac{Tier\ 1\ Capital}{Total\ Exposure*}$ * Total Exposure = Balance Sheet & Off-Balance Sheet Exposure	**3%** - both at Solo & Consolidated Level

Supervisory Review Process - Pillar 2

(Maintaining Additional Required Capital)

The Supervisory Review Process addresses two issues:

1. to ensure that banks have **adequate capital** to support all the risks in their business and

2. to encourage banks to develop and use **better risk management** techniques in monitoring and mitigating their risks

Maintaining Additional Capital for the Following Risks

1. Residual risk
2. Credit concentration risk
3. Liquidity risk
4. Interest rate risk in the banking book
5. Reputation risk
6. Settlement risk
7. Strategic risk
8. Environmental & Climate change risk
9. Appraisal of core risk management practice
10. Other material risk

Market Discipline - Pillar 3

A set of disclosure requirements by banks

- to **establish more transparency** so that stakeholders can assess the POSITION OF A BANK regarding holding of assets

- and **to identify the risks relating to the assets** and capital adequacy to meet probable loss of assets .

A **formal disclosure framework** approved by the Board of Directors/Chief Executive Officer.

LCR & NSFR

Two standards/ratios proposed

1 **Liquidity Coverage Ratio (LCR)** for short term (30 days)
Liquidity Risk Management under stress scenario

$$LCR = \frac{Stock\ of\ High\ Quality\ Liquid\ Assets}{Total\ Net\ Cash\ Outflow\ over\ the\ next\ 30\ calendar\ days} \geq 100\%$$

2 **Net Stable Funding Ratio (NSFR)** for longer term
Structural Liquidity Mismatches

$$NSFR = \frac{Available\ Amount\ of\ Stable\ funding\ (ASF)}{Required\ Amount\ of\ Stable\ Funding\ (RSF)} \geq 100\%$$

Phase-in Arrangement under Basel III

	2015	2016	2017	2018	2019
Minimum Common Equity Tier 1 (CET1) Capital Ratio	4.50%	4.50%	4.50%	4.50%	4.50%
Capital Conservation Buffer (**CB**)	-	0.625%	1.25%	1.875%	2.50%
Minimum CET 1 + CB	4.50%	5.125%	5.75%	6.375%	7.00%
Minimum T-1 Capital Ratio	5.50%	5.50%	6.00%	6.00%	6.00%
Minimum Total Capital Ratio	10.00%	10.00%	10.00%	10.00%	10.00%
Minimum Total Capital + CB	10.00%	10.625%	11.25%	11.875%	12.50%
Phase-in of deduction from CET1					
Excess Investment over 10% of bank's equity	20%	40%	60%	80%	100%
Phase-in of deduction from CET1					
RR from Fixed Assets, Securities & Equity	20%	40%	60%	80%	100%

Phase-in Arrangement under Basel III (Contd.)

	2015	2016	2017	2018	2019
Leverage Ratio (LR)	3%	3%	3% Readjust	Migration to Pillar 1	
Liquidity Coverage Ratio (LCR)	>=100% From Sept	>=100%	>=100%	>=100%	>=100%
Net Stable Funding Ratio (NSFR)	>=100% From Sept	>=100%	>=100%	>=100%	>=100%

Credit Risk

- Credit risk is the potential that a bank borrower or counterparty fails to meet its obligation in accordance with agreed term.
- Claims: Exposures such as deposits (including foreign currency), placements, investments, loans and advances underlying with counterparties.

Exposures related to Credit Risks

Claims on sovereign and central bank: Loans and advances to the Government of Bangladesh (GoB), and investments in GoB securities, BB securities, and Development Bonds including Foreign Currency Bonds. All deposit and reserves (including foreign currency) maintained with BB.

Claims on other sovereigns and central banks: Loans and advances to and investments in securities of governments and central banks except GoB and BB.

Claims on the Bank for International Settlements (BIS), the International Monetary Fund (IMF), European Central Bank and the European Community: Loans and advances to and investments in BIS, IMF, European Central Bank, and the European Community.

Claims on multilateral development banks (specific): Loans and advances to and investments in the following:

IBRD , IFC, ADB, AfDB, EBRD, IADB, EIB, EIF, NIB, CDB, IDB, CEDB

Claims on multilateral development banks (Others):
Loans and advances to and investments in Multilateral Developments Banks (MDBs) other than those specified above.

Claims on government/ public sector entities (PSE):
Loans and advances to and investments (excluding equity exposure) in all public corporations, statutory boards and authorities, local government bodies etc. owned or controlled by GoB or any entity categorized as PSE by BB.

Claims on banks and non-bank financial institutions (NBFIs):
Loans and advances, placements, deposits (including Nostro Accounts), debentures (which are not treated as capital of the issuing bank or NBFI), dues on various trade bills, repurchase agreement and investments (excluding equity exposure) in all scheduled banks, NBFIs, and foreign banks.

Claims on corporate: Loans and advances to and investments (excluding equity exposure) in corporate. “Corporate” refers to any proprietorship, partnership or limited company that is neither PSE, bank, NBFI nor borrower within the definition of retail portfolio and SME.
Claims categorized as retail portfolio and SME: Qualifying criteria for the retail portfolio and SME are as follows:

- **Orientation criterion**: The exposure to an individual person or persons or to SME (The definition of SME will be the same as defined by BB from time to time).
- **Product criterion**: The exposure takes the form of any of the following product types:

  a) Revolving credit and lines of credit (including overdrafts)

  b) Term loans and leases (e.g. installment loans, vehicle loans for manufacturing/production and leases, student and educational loans, micro business facilities and commitments)

The following claims, both fund based and non fund based, will be excluded from retail portfolios:

a) Exposures by way of investments in securities (such as bonds and equities), whether listed or not; b) Mortgage loans to the extent that they qualify for treatment as claims secured by residential property or claims secured by commercial real estate c) Loans and advances to bank's own staff which are fully covered by superannuation benefits and / or mortgage of flat/ house;

d) Consumer finance; e) Capital market exposures; and f) Venture capital funds.

Granularity criterion: Exposures under this category must be sufficiently diversified to a degree that reduces the risks. In order to meet this criterion, aggregate exposure without considering Credit Risk Mitigation (CRM), to one counterpart should not exceed 0.2% of the overall exposures under this category excluding past due loans. 'To one counterpart' means one or several entities that may be considered as a single beneficiary (e.g. in the case of SME that is affiliated to another SME, the limit would apply to the banks' aggregate exposure on both businesses).

Exposure limit: The maximum aggregate exposure to a person(s) or entity(ies) will be limited to BDT 1.00 (One) crore.

Consumer finance:
Loans and advances to individuals for meeting their personal, family or household needs that includes credit cards, auto/vehicle loans for personal use, personal loans, and any purpose loan etc.

Claims secured by residential property:
Lending fully secured by mortgages on residential property that is or will be occupied by the borrower or that is or will be rented. Loans for the purpose of constructing/purchasing/renovating of house/apartment provided to individuals will fall under this category. Loans secured by residential real estate for business purpose will not fall under this category.

Claims secured by commercial real estate:
Lending fully secured by mortgages on commercial real estate that will be occupied or rented or sold by the borrower. The mortgages may be used for office and/or multipurpose commercial premises and/or multi-tenanted commercial premises etc. Industrial or warehouse space, hotels, land acquisition for/development/construction of residential real estate by real estate companies, and exposures to entities for setting up special economic zones will also be treated as commercial real estate.

Past due claims: *The unsecured portion of any claim or exposure (other than claims secured by residential property) that is past due for 90 days or more, net of specific provisions (including partial write-off) will be risk weighted. For the purpose of defining the net exposure of the past due loan, eligible financial collateral (if any) may be considered for Credit Risk Mitigation. General provision maintained against Special Mention Account (SMA) loan will not be eligible for such net off.*

Capital market exposures:

Claims against investor account holder or margin account holder of the subsidiary companies (Merchant banking/Brokerage house) of the bank will fall under this category.

Venture capital:

Venture capital is provided as funding to early-stage, high-potential, growth companies in the interest of generating a return through an eventual realization event. Venture capital investments are generally made in cash in exchange for shares in the invested company. Investment in equity of unlisted entities other than PSEs includes in this category.

All other assets :

a) Claims on GoB and BB other than those specified above

b) All staff loan secured by residential property/and superannuation benefit;

c) Cash items in process of collection: Cheques, drafts and other cash items, such as money orders, postal orders drawn on the banks and other authorized institutions and paid immediately on presentation. Trade Bills, such as import bills and export bills, in the process of collection should be excluded from this item.

d) Claims on Off-shore Banking Units (OBU);

e) Other asset (if any other items which are not specified above).

Credit Risk:
Risk-weights & Credit Conversion Factor (CCF)

Balance sheet assets and Off-balance sheet exposures

11 (Eleven) categories of risk weights:

0%, 20%, 30%, 40%, 50%, 60%, 75%, 80%, 100%, 120%, 125% and 150%.

Off-balance sheet transactions are converted into balance sheet equivalents for the purpose of assessing the capital adequacy before assigning a risk weight

Credit conversion factors:

0%, 20%, 50% and 100%

Mapping with Risk Weight

- Basel III Capital Adequacy Framework recommends development of a mapping process to **assign the ratings** issued by eligible credit rating agencies **to the risk weights** available under the Standardized risk weighting framework
- The mapping process is required to result in a **risk weight** assignment **consistent** with that of the **level of credit risk**
- Supervisory Authority may **manipulate mapping process** if deem it necessary

ECAI's Credit Rating Categories Mapped with BB Rating

BB Rating Grade	Equivalent Rating of S&P and Fitch	Equivalent Rating of Moody	Equivalent Rating of CRISL	Equivalent Rating of CRAB	Equivalent Rating of NCRL	Equivalent Rating of ECRL
1	AAA to AA	Aaa to Aa	AAA, AA+, AA, AA-	AAA, AA1, AA2, AA3	AAA, AA+, AA, AA-	AAA, AA+, AA, AA-
2	A	A	A+, A, A-	A1, A2, A3	A+, A, A-	A+, A, A-
3	BBB	Baa	BBB+, BBB, BBB-	BBB1, BBB2, BBB3	BBB+, BBB, BBB-	BBB+, BBB, BBB-
4	BB to B	Ba to B	BB+, BB, BB-	BB1, BB2, BB3	BB+, BB, BB-	BB+, BB, BB-
5	Below B	Below B	B+, B, B-, CCC+, CCC, CCC-, CC+, CC, CC-	B1, B2, B3, CCC1, CCC2, CCC3, CC	B+, B, B-	B+, B, B-
6			C+, C, C-, D	C, D	C+, C, C-, D	D
Short-Term Rating Category Mapping						
S1	F1+	P1	ST-1	ST-1	N1	ECRL-1
S2	F1	P2	ST-2	ST-2	N2	ECRL-2
S3	F2	P3	ST-3	ST-3	N3	ECRL-3
S4	F3	NP	ST-4	ST-4	N4	ECRL-4
S5,S6	B,C, D		ST-5, ST-6	ST-5, ST-6	N5	D

Risk weight for off-balance sheet exposures

- Total risk weighted assets for off-balance sheet (OBS) exposure will be the sum of risk-weighted assets for market related and non-market related OBS transactions.
- The risk-weighted amount of the OBS transaction that gives rise to credit exposure is generally calculated by means of a two-step process:
  - ➢ The notional amount of a transaction is converted into a balance sheet equivalent (i.e. credit equivalent amount or potential exposure) by multiplying the amount with an appropriate credit conversion factor (CCF).
  - ➢ The resulting credit equivalent amount will be multiplied by the risk weight associated with the credit rating of that counterparty.
- Where OBS item is secured by eligible collateral or guarantee, the credit risk mitigation facility may be applied.

Off-Balance Sheet Exposures: *Credit Conversion Factors (CCF)*

Nature of transactions	Credit Conversion Factor (CCF)
Direct Credit Substitute	100%
Performance related contingencies	50%
Trade related contingencies	20%
Lending of securities or posting of securities as collateral	100%
Other commitments	
(a) Commitments with certain drawdown	100%
(b) Commitments with an original maturity	
(i) one year or less	20%
(ii) over one year	50%
(c) Commitments that can be unconditionally cancelled at any time	10%

Credit Risk Mitigation (CRM)

Techniques to reduce credit risk to which banks are exposed to:

a) Collateral for Credit Risk Mitigation

b) Guarantee for Credit Risk Mitigation

Credit risk mitigation (CRM)

Collateral for credit risk mitigation

Where a transaction is secured by eligible financial collateral and meets the eligibility criteria and minimum requirements, banks are allowed to reduce their credit exposure or potential credit exposure to cover exposure under that particular transaction (except claims against investor account/margin account holder) by taking into account the risk mitigating effect of the collateral for the calculation of capital charge.

a) Cash (as well as certificate of deposit or fixed deposit or comparable instruments of lending bank) on deposit with the bank, which is incurring the counterparty exposure

b) Gold

c) Securities rated by a recognized ECAI where these are either:

- at least rated ‘4’ when issued by sovereigns or PSEs that are treated as sovereigns by BB
- at least rated ‘3’ when issued by other entities (including banks and securities firms); or
- at least rated ‘S3’ for short-term debt instruments.

Credit risk mitigation (CRM)

d) Debt securities not rated by a recognized ECAI where these are:

- issued by a bank;
- listed on a recognized exchange;
- classified as senior debt;
- all rated issues of the same seniority by the issuing bank are rated at least ‘3’/‘S3’ by a recognized ECAI; and
- the bank holding the security as collateral has no information to suggest that issue justifies a rating below ‘3’/‘S3’ and BB views such securities as liquid and marketable

e) Equities (including convertible bonds) those are enlisted and regularly traded in Dhaka Stock Exchange and Chittagong Stock Exchange. The value of the equity will be computed on the basis of last 6 months daily average price.

Credit risk mitigation (CRM)

Calculation of capital charge

- Where transactions secured by eligible collateral, banks need to first calculate the net exposure amount by taking into account the effect of collateral.
- The net exposure amount (if positive) is then weighted according to risk-weight of the counterparty to obtain the risk-weighted asset amount for the collateralized transaction.
- In calculating the adjusted exposure amount after risk mitigation, adjustments (“haircuts”) are applied to both the collateral and the exposure to take into account possible future price fluctuations.

Credit risk mitigation (CRM)

Where the volatility-adjusted exposure amount is greater than the volatility-adjusted collateral amount (including any further adjustment for foreign exchange risk), bank will calculate their risk-weighted assets with the difference between the two multiplied by the risk weight of the counterparty:

$$\mathbf{E^* = \max [0, E \times (1 + He) - C \times (1 - Hc - Hfx)]}$$

Where:

E* = the exposure value after risk mitigation

E = current value of the exposure for which the collateral qualifies as a risk mitigate

He = haircut weight appropriate to the exposure

C = the current value of the collateral received

Hc = haircut weight appropriate to the collateral

Hfx = haircut weight appropriate for currency mismatch between the collateral and exposure

WS-1: Risk Weighted Asset for Credit Risk

Balance Sheet Exposures

S.L.	Exposure Type	BB's Rating Grade *	Risk Weight	Exposure	Risk Weighted Asset
1	*2*	*3*	*4*	*5*	*6 = (4×5)*
a)	**Cash (including FC)**		**0.00**		
b)	**Claims on Bangladesh Government and Bangladesh Bank (including FC)**		**0.00**		
c)	**Claims on other Sovereigns & Central Banks***				
d)	**Claims on Bank for International Settlements, International Monetary Fund and European Central Bank**		**0.00**		
e)	**Claims on Multilateral Development Banks (MDBs):**				
	i) IBRD , IFC, ADB, AfDB, EBRD, IADB, EIB, EIF, NIB, CDB, IDB, CEDB		**0.00**		
	ii) Other MDBs	**1**	**0.20**		
		2,3	**0.50**		
		4,5	**1.00**		
		6	**1.50**		
		Unrated	**0.50**		

WS-1: Risk Weighted Asset for Credit Risk

Balance Sheet Exposures

S.L.	Exposure Type	BB's Rating Grade *	Risk Weight	Exposure	Risk Weighted Asset
1	*2*	*3*	*4*	*5*	*6 = (4×5)*
f	**Claims on Public Sector Entities (other than Government) in Bangladesh**	1	0.20		
		2,3	**0.50**		
		4,5	**1.00**		
		6	**1.50**		
		Unrated	**0.50**		
g)	**Claims on Banks and FIs: (including NOSTRO)**				
	i) Maturity over 3 months	**1**	**0.20**		
		2,3	**0.50**		
		4,5	**1.00**		
		6	**1.50**		
		Unrated	**1.00**		
	ii) Maturity less than 3 months		**0.20**		
h)	**Claims on Corporate (excluding equity exposure)**	**1**	**0.20**		
		2	**0.50**		
		3,4	**1.00**		
		5,6	**1.50**		
		Unrated	**1.25**		

WS-1: Risk Weighted Asset for Credit Risk

Balance Sheet Exposures

S.L.	Exposure Type	BB's Rating Grade *	Risk Weight	Exposure	Risk Weighted Asset
1	*2*	*3*	*4*	*5*	*6 = (4×5)*
h(1)	**Claims on SME**	SME 1	0.20		
		SME 2	0.40		
		SME 3	**0.60**		
		SME 4	**0.80**		
		SME 5	**1.20**		
		SME 6	**1.50**		
		Unrated (SE<BDT 3. mil)	**0.75**		
		Unrated (SE > BDT 3. mil & ME)	**1.00**		
i)	**Claims under Credit Risk Mitigation[Worksheet-1(a)**				
		PSE	N/A		
		Banks & NBFIs	N/A		
		Corporate	N/A		
		SME	N/A		
		Retail	N/A		
		Consumer finance	N/A		
		Residential property	N/A		
		Commercial real estate N/A	N/A		

S.L.	Exposure Type	Weight	Exposure	Risk Weighted Asset
1	*2*	*4*	*5*	*6 = (4×5)*
Fixed Risk Weight Groups:				
j)	Claims categorized as retail portfolio	**0.75**		
k)	Consumer Loan	**1.00**		
l)	Claims fully secured by residential property	**0.50**		
m	Claims fully secured by commercial real estate	**1.00**		

S.L.	Exposure Type	Weight	Exposure	Risk Weighted Asset
1	*2*	*4*	*5*	*6 = (4×5)*
	Past Due Claims (Risk weights are to be assigned net of specific provision):			
n)	**1.The claim (other than claims secured by eligible residential property) that is past due for more than 90 days and/or impaired will attract risk weight as follows:**			
	- Where specific provisions are less than 20 per cent of the outstanding amount of the past due claim ;	**1.50**		
	- Where specific provisions are no less than 20 per cent of the outstanding amount of the past due claim.	**1.00**		
	- Where specific provisions are more than 50 per cent of the outstanding amount of the past due claim.	**0.50**		
	2. Claims fully secured against residential property that are past due for more than 90 days and/or impaired specific provision held there-against is less than 20% of outstanding amount	**1.00**		
	3. Loans and claims fully secured against residential property that are past due by 90 days and /or impaired and specific provision held there-against is more than 20% of outstanding amount	**0.75**		

S.L.	Exposure Type	Weight	Exposure	Risk Weighted Asset
1	2	4	5	6 = (4×5)
o)	Capital Market Exposures	1.25		
p)	Unlisted equity investment and regulatory capital instruments	1.25		
q)	Investments in venture capital	1.50		
r)	Investments in premises, plant and equipment and all other fixed assets	1.00		
s)	Claims on all fixed assets under operating lease	1.00		
t)	All other assets			
	i) Claims on GoB and BB	0.00		
	ii) Staff Loans/investment	0.20		
	iii) Cash items in process of collection	0.20		
	iv) Claims on Off-shore Banking Units (OBU)	1.00		
	v) Others (not specified above)	1.00		
Total:				

Work Sheet – 2

Risk Weighted Asset for Credit Risk Off-Balance Sheet Exposure

Sl.	Exposure type	Rating	Risk weight	Exposure	RWA
a.	**Claims on Bangladesh Government and Bangladesh Bank**		**0.00**		
b.	**Claims on other Sovereigns & Central Banks**				
c.	**Claims on Bank for International Settlements, International Monetary Fund and European Central Bank**		**0.00**		
	Claims on Multilateral Development Banks (MDBs):				
	i) IBRD , IFC, ADB, AfDB, EBRD, IADB, EIB, EIF, NIB, CDB, IDB, CEDB		**0.00**		
	i) Other MDBs	**1**	**0.20**		
		2,3	**0.50**		
		4,5	**1.00**		
		6	**1.50**		
		Unrated	**0.50**		

Work Sheet – 2

Risk Weighted Asset for Credit Risk Off-Balance Sheet Exposure

Sl.	Exposure type	Rating	Risk weight	Exposure	RWA
d.	**Claims on Public Sector Entities (other than Government) in Bangladesh**	1	0.20		
		2,3	0.50		
		4,5	1.00		
		6	1.50		
		Unrated	0.50		
e.	**Claims on Banks & NBFIs**				
	i) **Maturity over 3 months**	1	0.20		
		2,3	0.50		
		4,5	1.00		
		6	1.50		
		Unrated	1.00		
	Maturity less than 3 months		0.20		

Work Sheet – 2
Risk Weighted Asset for Credit Risk Off-Balance Sheet Exposure

Sl.	Exposure type	Rating	Risk weight	Exposure	RWA
f.	Claims on Corporate	1	0.20		
		2	0.50		
		3,4	1.00		
		5,6	1.50		
		Unrated	1.25		
g.	Claims against SME		***		
h.	Claims against retail portfolio		1.00		
i.	Consumer finance		0.50		
j.	Claims fully secured by residential property		1.00		
k.	Claims fully secured by commercial real estate		1.50		
l.	Investments in venture capital		1.00		
m	All other assets				
	Total				

Templates for calculation of MCR

Modules	Templates
Capital requirements & RWA	3 MCR, RC, RWA
Credit risk exposure	4 WS-1, WS-1(a), WS-2, Ws-2(a)
Market risk exposure	***5*** ***WS-3, WS-3(a), WS-3(b), WS-3(c), WS-3(d)***
Operational risk exposure	***1*** ***WS-4***

What is market risk?

Market risk is "the risk related to the uncertainty of a financial institution's earnings on its trading portfolio caused by changes in market conditions such as the *price of an asset, interest rates, market volatility, and market liquidity*"

(Saunders & Cornett, Chapter 10)

"***Financial Institutions Managements-A risk Management Approach"***

Anthony Sunders and Marcia Millon Cornett

Market risk is the risk of *adverse consequences* following a movement in the market.

Adverse –ultimately something that weakens the institutions financial position.

Market Risk is not just restricted to the trading book

Market Risk under Basel III

Specific Risk Charge

The specific risk charge measures the risk of a decline in the liquidity or credit risk quality of the portfolio over the holding period.

Multiplying the absolute Taka values of the long and short positions by the specific risk weights produces a specific risk capital (or requirement charge) for each position.

Summing the individual charges for specific risk gives the total specific risk charge.

General Market Risk Charge

The general market risk charges the product of the modified durations and interest rate shocks expected for each maturity.

The positive or negative Taka values of the positions in each instrument are multiplied by the general market risk weights to determine the general market risk charges for the individual holdings.

Summing these gives the total general market risk charge of the entire fixed-income portfolio

General Market Risk Charge

Vertical Offsets

The BIS model assumes that long and short positions, in the same maturity bucket but in different instruments, cannot perfectly offset each other.

Thus, the general market risk charge tends to underestimate interest rate or price risk exposure.

To account for this, BIS requires additional capital charges for basis risk, called vertical offsets or disallowance factors.

Horizontal Offsets within Time Zones

The debt trading portfolio is divided into three maturity zones. Because of basis risk (i.e., the imperfect correlation of interest rates on securities of different maturities), short and long positions of different maturities in these zones will not perfectly hedge each other. This results in additional (horizontal) disallowance factors for each maturity zone, as follows:

- **Zone 1 (1 to 12 months): 40%**
  Zone 2 (>1 year to 4 years): 30%
  Zone 3 (> 4 to 20 years or more): 30%

WS-3(a): Specific Risk on

Interest Rate Related Instruments

(Taka in Crore)

Counter Party	Maturity	Amount (Market Value)	Weight	Capital Charge
1	2	3	4	5=3X4
Total				

WS-3(b): General Market Risk on

Interest Rate Related Instruments

(Taka in Crore)

Counter Party	Maturity	Amount (Market Value)	Weight	Capital Charge
1	2	3	4	5=3X4
Total				

Table – 14: Capital Charge Weight for Specific risk

Categories	BB Rating grade	particulars	Capital Charge Weight (%)
Government (Domestic Currency)	--	--	0
Government (Other than Domestic Currency)	1		0
	2 , 3	Residual term to final maturity 6 months or less	0.25
		Residual term to final maturity greater than 6 and up to and including 24 months	1
		Residual term to final maturity exceeding 24 months	1.60
	4 , 5	--	10
	6	--	12
	Unrated	--	10
Qualifying	--	Residual term to final maturity 6 months or less	0.25
		Residual term to final maturity greater than 6 and up to and including 24 months	1
		Residual term to final maturity exceeding 24 months	1.60
Other	1	--	2
	2 , 3	--	6
	4	--	10
	Below 4	--	12
	Unrated	--	10

Capital charges for Specific risk

- **Government category**:

  all the existing government securities.

  All BDT denominated government securities will carry zero percent capital charge weight as well as for foreign currency denominated securities whether issued by domestic or foreign governments.

- **Qualifying category**:
  - Debt securities issued by public sector entities and multilateral development banks, and other securities that are recognized by BB for including in this category.
  - A debt security rated by at least two credit rating agencies of the approved panel of BB, neither rating to be worse than an equivalent BB Ratings Grade 3.

- **Other category:**

  which are not included in 'Government' or 'Qualifying category' above.

Table 15 : Maturity method: time-bands and weights

Zone	Time-bands for Coupon 3% or more	Time-bands for Coupon less than 3%	Risk weight
Zone 1	**1**	**2**	**3**
	1 month or less	1 month or less	0.00%
	1 to 3 months	1 to 3 months	0.20%
	3 to 6 months	3 to 6 months	0.40%
	6 to 12 months	6 to 12 months	0.70%
Zone 2	1 to 2 years	1.0 to 1.9* years	1.25%
	2 to 3 years	1.9 to 2.8 years	1.75%
	3 to 4 years	2.8 to 3.6 years	2.25%
Zone 3	4 to 5 years	3.6 to 4.3 years	2.75%
	5 to 7 years	4.3 to 5.7 years	3.25%
	7 to 10 years	5.7 to 7.3 years	3.75%
	10 to 15 years	7.3 to 9.3 years	4.50%
	15 to 20 years	9.3 to 10.6 years	5.25%
	Over 20 years	10.6 to 12 years	6.00%
		12 to 20 years	8.00%
		Over 20 years	12.50%

* *Time bands after decimal represents months i.e. 1.9 to be read as 1 year 9 months*

ABC Bank holding following interest rate

				(Fig in Crore Tk.)
Instrument	Market Value	Residual Maturity	Coupon	Comments
BD Shipping Corporation	17.77	8 yrs	8%	
BD Government bond	95	2 yrs	7%	
XYZ Ltd. Bond	50	5 yrs	11%	Debt instrument rated A by CRISL and A3 by CRAB
BD Government bond	180.50	3 months	6%	
BD Government bond	100.43	5 months	7%	
Sub total	443.70			
Interest rate swap	150	Residual life of the swap : 8 yrs, Bank recieves floating rate and pays fixed.		with a Bank rated AA+ Next interest fixing after 6 months
Interest rate future (GB Future Bond)	50	Delivery date after 6 months		Life of underlying govt. security : 3.5 Yrs
Sub total	200.00			

ABC Bank Ltd. Work Sheet-3(a): Specific Risk (31

(Tk in Crore)

Categories	BB rating grade	Maturity	Amount (Market Value)	Weight (%)	Capital Charge
Government	..	..	375.93	0.00	0.00
Government (Other than Domestic Currency)	1			0.00	0.00
	2,3	RM=6 M or less		0.25	0.00
		6M<RM<=24M		1	0.00
		RM>24M		1.60	0.00
	4,5	..		10	0.00
	6	..		12	0.00
	Unrated	..		10	0.00
Qualifying		RM=6 M or less		0.25	0.00
	--	6M<RM<=24M		1	0.00
		RM>24M	67.77	1.60	1.08
Others	1	..		2	0.00
	2, 3	..		6	0.00
	4	..		10	0.00
	Below 4	..		12	0.00
	unrated	..		10	0.00
Total			443.70		1.08

ABC Bank Ltd. (General Market Risk) 31 Dec 2015

(BDT crore)

Zone	Timeband: Coupon 3% or more	Timeband: Coupon less than 3%	Individual positions: Debt securities & debt derivatives Long	Debt securities & debt derivatives Short	Interest rate derivatives Long	Interest rate derivatives Short	Total Long	Total Short	Risk Weight	Weighted positions Long	Weighted positions Short	Byband Matched	Byband Unmatched	Byzone Matched	Byzone Unmatched	Between zones Matched
1	1 month or less	1 month or less					0.00	0.00	0.00%			0.0000	0.0000			
	1 to 3 months	1 to 3 months	180.50				180.50	0.00	0.20%	0.3610	0.0000	0.0000	0.3610	0.00	1.6127	0.0000
	3 to 6 months	3 to 6 months	100.43			50.00	100.43	50.00	0.40%	0.4017	0.2000	0.2000	0.2017			
	6 to 12 months	6 to 12 months			150.00		150.00	0.00	0.70%	1.0500	0.0000	0.0000	1.0500			
2	1 to 2 years	1.0 to 1.9 years					0.00	0.00	1.25%	0.0000	0.0000	0.0000	0.0000			
	2 to 3 years	1.9 to 2.8 years	95.00				95.00	0.00	1.75%	1.6625	0.0000	0.0000	1.6625	0.00	2.7875	2.7875
	3 to 4 years	2.8 to 3.6 years			50.00		50.00	0.00	2.25%	1.1250	0.0000	0.0000	1.1250			
3	4 to 5 years	3.6 to 4.3 years					0.00	0.00	2.75%	0.0000	0.0000	0.0000	0.0000			
	5 to 7 years	4.3 to 5.7 years	50.00				0.00	0.00	3.25%	0.0000	0.0000	0.0000	0.0000			
	7 to 10 years	5.7 to 7.3 years	17.77			150.00	17.77	150.00	3.75%	0.6664	5.6250	0.6664	(4.9586)			
	10 to 15 years	7.3 to 9.3 years					0.00	0.00	4.50%	0.0000	0.0000	0.0000	0.0000	0.00	(4.9586)	1.6127
	15 to 20 years	9.3 to 10.6 years					0.00	0.00	5.25%	0.0000	0.0000	0.0000	0.0000			
	Over 20 years	10.6 to 12 years					0.00	0.00	6.00%	0.0000	0.0000	0.0000	0.0000			
		12 to 20 years					0.00	0.00	8.00%	0.0000	0.0000	0.0000	0.0000			
		over 20 years					0.00	0.00	12.50%	0.0000	0.0000	0.0000	0.0000			
	TOTAL		443.70	0.00	200.00	200.00	593.70	200.00		5.2666	5.8250	0.8664			0.5584	
	OVERALL NET OPEN POSITION									(0.5584)						

Calculation	Vertical disallowance	Horizontal Disallowance in Zone 1	Horizontal Disallowance in Zone 2	Horizontal Disallowance in Zone 3	Horizontal Disallowance between Zones 1 & 2	Horizontal Disallowance between Zones 2 & 3	Horizontal Disallowance between Zones 1 & 3	Overall net open position	TOTAL GENERAL MARKET RISK CAPITA CHARGE
-									
GENERAL MARKET RISK CAPITAL CHARGE	0.09	0.00	0.00	0.00	0.00	1.12	1.61	0.56	3.37

Equities (Under BIS Standardized Framework)

Methods the BIS uses to regulate market risks

Two sources of risk in holding equities: (1) a firm-specific, or unsystematic, risk element and (2) a market, or systematic, risk element.

Unsystematic risk is charged by adding the long and short positions in any given stock and applying a 5% charge against the gross position in the stock. (**This is called the x factor**).

Market or systematic risk is reflected in the net long or short position.

The capital charge is 10% against the net position. (**This is called the y factor**).

The total capital charge for the stock is the “x factor” plus the “y factor”.

This approach is crude and does not fully consider the benefits of portfolio diversification (i.e., that unsystematic risk is not diversified away).

Work Sheet- 3(c): Capital Charge on Equities

Capital charge for	Market Value	Weight	Required Capital Charge
1	2	3	4= (2×3)
a) Specific Risk :		**10% (CRAR)**	
b) General Market Risk:		**10% (CRAR)**	

Foreign Exchange (FX) Risk

Foreign Exchange (Under BIS Standardized Framework)

The standardized model or framework requires the bank to calculate its net exposure in each foreign currency and then convert this into dollars at the current spot exchange rate.

The BIS standardized framework imposes a capital requirement equal to **MCR** multiplied by the maximum absolute value of the aggregate long or short positions.

Net exposure = (FX assets - FX liabilities) + (FX bought - FX sold)

= Net foreign assets + Net FX bought

Positive net exposure: net long a currency

Negative net exposure: net short a currency

Different types of foreign trading activities and the sources of most profits and losses on foreign exchange trading.

Purchase/sale of foreign currencies

1. To allow customers to participate in international commercial trade transactions
2. To allow customers to take positions in foreign investments(real or fin. assets)
3. For hedging purposes—i.e., to offset currency exposure
4. For speculative purposes

WS-3(d): Capital Charge on Foreign Exchange Position

Currency		Net Long (+) /Short (-) position in USD equivalent (mn)	Taka Equivalent (in Crore Tk).
US dollar	USD		
Japanese yen	JPY		
Swiss franc	CHF		
Pound Sterling	GBP		
Euro	EUR		
Canadian Dollar	CAD		
Australian Dollar	AUD		
Singapore dollar	SGD		
Other Currencies			
Sum of the net LONG position			
Sum of the net SHORT position			
Overall net position*			
Risk weight			
Capital charge for Foreign Exchange Exposure			
The **overall net** position shall be ***greater one*** of the absolute value of the sum of the net long or the sum of short position.			
Current spot market exchange rate is Taka ------ per US$ 1.			

Capital Charges for Foreign Exchange Risk

a) The capital charge for foreign exchange risk will be 10% of bank's overall foreign exchange exposure. The bank'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) the net forward position (i.e. all amounts to be received less all amounts to be paid under forward foreign exchange transactions, including currency futures and the principal on currency swaps not included in the spot position);
- iii) guarantees (and similar instruments) that are certain to be called and are likely to be irrecoverable;
- iv) net future income/expenses not yet accrued but already fully hedged (at the discretion of the reporting bank);
- v) any other item representing a profit or loss in foreign currencies;

b) The overall foreign exchange exposure is measured by aggregating the sum of the net short positions or the sum of the net long positions; whichever is the greater, regardless of sign. The capital charge will be 10% (CRAR) of the overall net open position.

WS-3: Capital Charge for Market Risk

(Balance Sheet Exposures)

Details	Capital Charge for Specific Risk	Capital Charge for General Market Risk	Total Capital Charge for Market Risk
1	**2**	**3**	**4 = (2+3)**
A. Interest Rate Related instruments	-------- From Work Sheet -3(a)	-------- From Work Sheet -3(b)	
B. Equities	-------- From Work Sheet -3(c)	-------- From Work Sheet -3(c)	
C. Foreign Exchange Position		-------- From Work Sheet -3(d)	
Total (A+B+C):			

Operational Risk Approaches

Approach	Basic Indicator	Standardized	Advanced Measurement
Qualifying criteria	• No specific criteria • Compliance with the Basel Committee's "Sound Practices for the Management and Supervision of Operational Risk" recommended	• Active involvement of Board of directors and Senior management • Existence of OpRisk Management function • Sound OpRisk Management system • Systematic tracking of loss data	Same as standardized plus • Measurement integrated into day-to-day risk management • Review of management and measurement processes by internal/external auditor • Numerous quantitative standards—in particular 3-5 years of historic data

WS- 4: Capital Charge for Operational Risk
Basic Indicator Approach

Year	Gross Income (GI)	Average GI*	15% of Average GI
2017	---------		
2016	----------		
2015	-----------		
Total GI			

* Only positive annual gross income over the previous three years (i.e. Negative or zero gross income if any shall be excluded)

Gross Income (GI) shall -

(i) be gross of any provisions (e.g. for unpaid interest/interest suspense)

(ii) be gross of operating expenses, including fees paid to outsourcing service providers

(iii) exclude realized profits/losses from the sale of securities held to maturity and available for sale

(iv) exclude extraordinary or irregular items as well as categorize

(v) exclude income derived from insurance.

Alternative Approaches for operational risk

- ✓ Bank may adopt The Standardized Approach (TSA)
- ✓ To adopt TSA bank has to be divided its business activities in eight business lines.

Business Lines Beta Factors		
Business Lines	*Beta Factors*	
1. Corporate finance	*β1*	*0.18*
2. Trading and sales	*β2*	*0.18*
3. Retail banking	***β3***	***0.12***
4. Commercial banking	***β4***	***0.15***
5. Payment and settlement	*β5*	*0.18*
6. Agency services	*β6*	*0.15*
7. Asset management	*β7*	*0.12*
8. Retail brokerage	*β8*	*0.12*

Bank may adopt Alternative Standardized Approach (ASA)

*a fixed factor '**m**' which will replace gross income as the exposure indicator.*

Bank may adopt Advance Management Approach (AMA)

Sonali Bank Limited

Minimum Capital Requirement (MCR)

Under Risk Based Capital Adequacy in line of Basel III

Quarter ended as on 31 December 2017

	Particulars	Tk. In Crore
A.	**Regulatory Capital :**	
1	**Tier-1 (2+3)**	**3,716.67**
2	Common Equity Tier-1 Capital (CET-1)	**3,716.67**
3	Additional Tier-1 Capital (AT-1)	**-**
4	**Tier-2 Capital**	**1,832.21**
5	**Total Regulatory Capital (1+4) :**	**4,768.38**
B.	**Total Risk Weighted Assets (RWA)**	**46,076.29**
C.	**Capital to Risk Weighted Assets Ratio (CRAR) (A5/B)*100**	**10.35**
D.	Common Equity Tier-1 to RWA (A2/B)*100	**8.07**
E.	Tier-1 Capital to RWA (A1/B)*100	**8.07**
F.	Tier-2 Capital to RWA (A4/B)*100	**2.28**
G.	**Minimum Capital Requirement (MCR)**	**4,607.63**

References

1. Bangladesh Bank BRPD Circular No. 18 dated December 21, 2014.

2. Guidelines on Risk Based Capital Adequacy, Revised Regulatory Capital framework for Banks in Line with Basel III

3. Revised Process Document for SRP, SREP Dialogue on ICAAP. Implementation of Second Pillar of BASEL III – May 2014

4. Bank for International Settlements – Basel II Overview International Convergence of Capital Standards (www.bis.org/bcbs/index.htm)

5. Bank for International Settlements – Basel III: International Regulatory Framework for Banks (www.bis.org/bcbs/index.htm)

6. Investopedia (www.Investopedia.com/articles/economics/10/understanding-basel-3-regulations.asp#axzz26w2DIKab

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Thank you.