

## **Risk Management Framework**

### **Margining Process**

The core of the risk management system followed at the India International Bullion Exchange (IFSC) Limited (IIBX) is based on the Liquid Assets deposited by members and is, inter alia, intended to cover mainly the requirements of :

- VaR Margin (Initial Margin)
- Extreme Loss Margin (ELM)
- Mark to Market (MTM)

The liquid assets deposited by members at all points of time should be adequate to cover the aforesaid requirements.

#### **1. Initial Margin**

The IIBX maintains collateral pool for each clearing member and initial margins levied are adjusted against the same pool of collateral.

The initial margin is computed based on the below parameters :-

1. The initial margin should satisfy 99% confidence level
2. The minimum period of risk (MPOR) is one day
3. Exponentially weighted moving average (EWMA) model is used for computation of volatility with a lambda factor of 0.995.
4. Margins are based on back-testing results
5. The initial margin is levied on the gross open position of the member.
6. The gross open position for this purpose means the gross of all net positions across all the clients of a member including its proprietary position.
7. The initial margin so blocked is unblocked after completion of settlement.

#### **a. Volatility**

The standard deviation (volatility estimate) is computed using the Exponentially Weighted Moving Average method ("EWMA"). The estimate at the end of time period  $t$  ( $\sigma_t$ ) is estimated using the volatility estimate at the end of the previous time period. i.e. as at the end of  $t-1$  time period ( $\sigma_{t-1}$ ), and the return ( $r_t$ ) observed in the spot market during the time period  $t$ . The volatility estimated at the end of the day's trading is used in calculating the initial margin calls at the end of the same day.

The formula is as under:

$$\sigma_t^2 = \lambda(\sigma_{t-1})^2 + (1 - \lambda)(r_t)^2$$

Where:

- $\lambda$  is a parameter which determines how rapidly volatility estimates changes. The value of  $\lambda$  is currently fixed at 0.995.
- $\sigma$  (sigma) means the standard deviation of daily returns in the futures market.
- $r$  (return) is defined as the logarithmic return:  $r_t = \ln (S_t/S_{t-1})$  where  $S_t$  is the price of the Stock at time  $t$ .

### **b. Value at Risk (VaR) Margin**

The VaR Margin is a margin intended to cover the largest loss that can be encountered on 99% of the days i.e. 99% Value at Risk.

The Value at Risk ("VaR") margin rates are as follows:

<b>S. No.</b>	<b>Product</b>	<b>VaR Margin Rates</b>
1	Gold	6%
2	Silver	9%

### **2. Extreme Loss Margin (ELM)**

Extreme Loss Margin (ELM) covers the expected loss in situation that go beyond those envisaged in the 99% Value at Risk estimates used in the VaR Margin.

The Extreme Loss Margin rates are as follows:

<b>S. No.</b>	<b>Product</b>	<b>ELM Margin Rates</b>
1	Gold	1%
2	Silver	1%

### **3. Mark to Market Losses ("MTM")**

1. The margining system currently levies margin based on net value (Buy – Sales value) of unsettled trades.
2. Intraday Crystallised Loss Margin (ICMTM) is levied to cover the risk arising out of accumulation of crystallised obligations incurred on account of intra-day squaring off of position.
3. The intra-day crystallised losses are monitored and blocked from the free collateral on a real-time basis only for those transactions which are subject to upfront margining.
4. Crystallised losses are offset against crystallised profits at a client level, if any.
5. If crystallised losses exceed the free collateral available with the Exchange, then the entity is put into risk reduction mode.
6. ICMTM losses are computed for all trades which are executed and closed out on the same trading day.
7. ICMTM is computed based on weighted average prices of trades.
8. ICMTM is adjusted against the available collaterals of the member in a real time.
9. MTM losses so blocked is released after completion of settlement

### **4. Adhoc-Margins:**

IIBX may charge ad-hoc margins based on prevailing volatility and various macro economic factors. The margin can be either a % or an absolute amount as informed by IIBX from time to time.

### **5. Updation of Risk Parameters**

The risk arrays are updated intra-day. The applicable VaR margin rates along with the latest traded price/ close price to arrive at the latest VaR Margin value are updated as follows:

---

- Beginning-of-Day
  - 10:30 a.m.
  - 12:00 p.m.
  - 01:30 p.m.
  - 03:00 p.m.
  - End-of-Day
-

## **6. Risk Reduction Mode**

Members are compulsorily placed in risk reduction mode when a predetermined % of the member's capital is utilized towards margins. When a member moves into risk reduction mode –

---

- All unexecuted orders are cancelled
  - Only fresh orders placed by members to reduce open positions are be accepted.
  - Fresh orders placed by members that increase open positions are checked for sufficiency of margins and orders that do not satisfy sufficiency of margins are rejected.
  - Fresh orders can be placed for immediate or cancel (IOC) only
  - Members will be able to trade in normal mode as and when the utilization goes below the predetermined %.
  - Additionally, Members are not allowed to place orders with custodial participant code,
  - Client and Custodial Participant code modification is not permitted.
- 

**The entry and exit threshold is detailed below :**

---

- Clearing Members: Put in RRM at 90% collateral utilisation & moved back to normal mode when utilisation goes below 85%.
  - Trading Members: Put on RRM at 90% utilisation of trading limit assigned by their Clearing Members & moved back to normal mode when limit utilisation goes below 85%.
- 
-