BASICS OF FOREX DERIVATIVES

🌍 **CH – 2 MODULE A BFM BY ASHISH SIR**

Any activity you engage in carries **uncertainty** — and this may result in either a **loss** 💸 or a **gain** 💰.

📌 What is Risk in Financial Terms?

In financial parlance, **risk** is associated with a potential **loss** that may arise due to the **occurrence or non-occurrence of specific events**. It refers to an **unplanned situation** that has **financial consequences**, such as reduced earnings or direct losses.

➡️ **Degree of risk** may vary based on:

	🔍 Parameter	⚖️ Influence on Risk
#1	**Area of operation**	Risk increases with complexity
#2	**Volume of transactions**	Higher volume = higher risk
#3	**Number of players**	More stakeholders = more risk

🌐 Why is International Trade & Forex Risky?

International trade and foreign exchange operations are highly vulnerable due to:

- 🌐 **Complexity of transactions**
- 💱 **Volatile currency behaviors**
- 🌍 **Expansive global operations**

➡️ **Risks are unavoidable** in such global activities.

💼 Common Risks in International Trade:

	📌 Type of Risk	🔍 Description
#1	🧍 Buyer Risk	Buyer defaults or delays payment
#2	🧍 Seller Risk	Seller fails to deliver goods or services
#3	🚢 Shipping Risk	Goods lost/damaged in transit

💱 Common Risks in Forex Operations:

💼 Type of Risk	📝 Description
💹 Exchange Risk #1	Fluctuation in currency value after trade agreement
🔄 Settlement Risk #2	Failure of one party to deliver the funds or currency
💧 Liquidity Risk #3	Inability to liquidate assets or obtain funds in time
🌍 Country Risk #4	Adverse economic/political changes in the foreign country
👑 Sovereign Risk #5	Government failing to meet obligations (e.g., defaulting on debts)
📉 Interest Rate Risk #6	Loss due to fluctuating interest rates
⚙️ Operational Risk #7	Internal process failures, system issues, or human error

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🔁 Risk-Return Relationship:

Higher Risk ➡️ Higher Return 🔼,

But unmanaged risks can exceed acceptable thresholds 🚨.

✅ Need for Risk Management

Risks must be:

- **Accepted**
- **Monitored**
- **Managed efficiently** ✅

👉 This helps **minimize negative impacts** and **maximize profitability or strategic goals** of the organization 📈.

📈 Innovative Risk Management: Derivatives

Risks involving **price volatility**, **exchange rates**, and **interest rates** — especially on commodities, currencies, and financial assets — need **smart hedging tools**.

🎯 **Derivatives** are one such solution.

🧮 What Are Derivatives?

A **derivative** is a financial instrument whose **value is derived from an underlying asset** (e.g., currency, commodity, bond, etc.)

🛡️ **Purpose**: To neutralize or reduce the uncertainty or volatility in the exposure.

🌟 Popular Derivative Instruments in Forex:

📘 Instrument	🔍 Purpose
📄 **Forward Contracts** #1	Lock in exchange rates for future transactions
📊 **Options** Call put Buy sell	Right (but not obligation) to buy/sell currency at a set rate
🔁 **Swaps**	Exchange of cash flows between parties (e.g., interest or currency swap)
📅 **Forward Rate Agreements**	Lock in interest rates for a future period
📉 **Futures**	Standardized contracts to buy/sell currency at a future date

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exchange Traded

OTC → Bilateral contracts

💬 Real-Time Examples

#1 🔷 **Example 1 – Exchange Risk**:

An Indian exporter secures a USD payment. Due to a drop in USD-INR rates before settlement, the exporter incurs a **conversion loss**.

💡 **Solution**: Use a **forward contract** to lock in rates.

🔷 **Example 2 – Country Risk**:

#2 A bank has exposure in Venezuela. Political turmoil leads to **restrictions on fund repatriation**.

💡 **Solution**: Monitor country credit ratings and limit exposure.

🔷 **Example 3 – Interest Rate Risk**:

#3 A company borrows on a floating interest rate. A sudden spike in interest rates increases its repayment cost.

💡 **Solution**: Use **interest rate swaps** to convert to fixed-rate.

💬 Human Element of Risk

Risk arises from **uncertainty** — humans cannot predict future outcomes with certainty. Hence, the attempt is always to **control the future impact** by **planning and hedging**.

💡 Managing risk is about ensuring favorable conditions **on a future date** while reducing the harmful effects of potential adversity.

🧾 DEFINITION OF RISK & RISKS IN FOREX OPERATIONS

📝 **Risk** is an unplanned event that results in financial consequences such as **loss or reduced earnings**.

➡️ If the outcome of an activity is uncertain and may lead to loss, it is termed a **risky proposition**, regardless of the potential for gain.

⚖️ In Life vs. Business

🧍 Life: Illness, disability, death

🏢 Business: Profit/loss based on operations management

💬 **In short**: Risk is the **uncertainty of outcomes** — in currencies, commodities, or any object due to **exposure** in that element.

🌐 Peculiarities of Forex Markets

Forex markets differ from other commodity markets due to several unique features:

🌟 Unique Forex Features	🔍 Explanation
🕓 **24x7 Market**	Operates round the clock globally
🧾 **OTC Market**	Over-the-counter, not limited to any location
📉 **High Frequency Fluctuations**	Rates change every few seconds
🌍 **Government Interventions**	Policies & controls can influence exchange rates
🕰️ **Time Zone Differences**	Delayed settlements due to differing business hours

➡️ These factors expose participants to a **wide range of risks**, requiring **utmost caution and robust risk management**.

🚨 Any laxity in forex operations can lead to significant losses — even business failure.

🔁 Recap of Major Risks in Forex:

📌 Type of Risk	📝 Quick Definition
💹 **Exchange Risk**	Currency value fluctuations post-trade
🔄 **Settlement Risk**	Payment/delivery failure
💧 **Liquidity Risk**	Difficulty in converting assets to cash
🌍 **Country Risk**	Political/economic instability abroad
👑 **Sovereign Risk**	Foreign government default
📉 **Interest Rate Risk**	Changing interest rates affect profitability
⚙️ **Operational Risk**	Internal system failures, errors, or fraud

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🧩 Summary Table: Key Concepts

🧠 Concept	📌 Description
What is Risk?	Uncertainty leading to financial loss
Why is it unavoidable?	Due to unpredictability in global trade & forex operations
Risks in International Trade	Buyer, Seller, Shipping Risks
Risks in Forex Operations	Exchange, Settlement, Liquidity, Country, Sovereign, Interest, Operational
Risk Management Goal	#1 Minimize losses, #2 maximize profits
Derivative Instruments	Tools like forwards, options, swaps used for hedging
Real-Life Examples	Currency drop, country instability, rising interest rates
Forex Market Characteristics	OTC, 24x7, high volatility, global influences

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#1

🚨 A. Exchange Risk – Most Common Forex Risk

Exchange risk arises from adverse movements in exchange rates that impact the **value of receivables or payables** in foreign currencies. If not **timely covered**, this can lead to losses.

🔄 How It Works

Dealers are expected to immediately cover transactions (via matching opposite deals). Delay in doing so exposes them to **exchange risk**, as market rates may move against their position.

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🧾 Understanding Currency Positions

📌 Position Type	📈 Meaning	💥 Risk Exposure
#1 **Overbought (Long)** Long	Assets + purchase contracts > Liabilities + sales contracts	Loss if currency **depreciates**
#2 **Oversold (Short)** Short	Liabilities + sales contracts > Assets + purchase contracts	Loss if currency **appreciates**

👉 The difference between purchase and sale positions is the **open position** — the dealer's exposure to exchange rate movements.

🌐 Why It's Crucial Today

In a **digitally connected world**, currencies are floating against each other 24x7. This makes **open positions highly sensitive** to even small market changes.

📊 Controls to Manage Exchange Risk

Due to trading lags, market volatility, or strategic views, positions are sometimes left open — but strictly within **RBI-approved limits**, such as:

⚙️ Limit Type	🔍 Purpose
✅ Daylight Limit #1	Max open position allowed during the day
🌙 Overnight Limit #2	Max position to carry forward overnight
💼 Single Deal Limit #3	Exposure cap on individual trades
🔁 Forward Mismatch (Gap) Limit #4	Controls mismatches in delivery/settlement timing
🛑 Stop Loss Limit #5	Caps loss per trade
📦 Volume/Trading Position Limit #6	Restricts total daily exposure

🏦 RBI allows each bank's **Board of Directors** to define their own exposure limits based on:

- Merchant turnover
- Trading capabilities
- Volume
- Capital base

RBI Limit type

BoD

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🧮 Types of Exchange Rate Exposures

🧩 Exposure Type	📝 Description	💡 Real Example
🔁 Transaction Exposure #1	Arises from day-to-day operations (e.g., sales/purchases in foreign currencies)	An Indian firm invoices $100,000 in USD. If USD falls before payment, loss occurs.

📊 **Translation Exposure** #2	Occurs when **revaluing assets/ liabilities** during financial reporting	Subsidiary books in USD, but parent co. reports in INR – affects financials
📉 **Operating Exposure** #3	Comes from market changes affecting competitiveness or pricing indirectly	Reduced import duties → more imports → affects local exporter's profitability

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📍 B. Settlement Risk – Also Called Herstatt Risk

OTC

Settlement risk arises from the **failure of a counterparty** during the final stages of a foreign exchange transaction.

💱 Forex Market Size:

Daily turnover exceeds **US$ 1.5 trillion** – all traded **without a central clearing house** 😳.

🔍 What Makes It Risky?

Each transaction is settled **individually between counterparties**.

Without central clearance, there's a chance that one party pays and the other defaults — leading to **total loss** for the paying party.

🧾 Types of Settlement Risk

📌 Type	🔍 Definition	⛔ Risk Level
⏳ **Pre-settlement Risk** #1	Risk that a counterparty may **default before maturity** of the contract	Partial (based on market rate difference)
🕰️ **Settlement Risk** #2	Risk of default **during actual payment** due to **time zone differences**	Total (if currency is delivered but not received)

🧠 Real-World Example – Herstatt Risk

💡 What Happened?

Temporal Risk

In 1974, German bank **Bankhaus Herstatt** received Deutsche Marks but failed before releasing US Dollars.

👉 This caused **losses** for global banks in different time zones. The incident coined the term **"Herstatt Risk"**.

🌍 Time Zones & Settlement Failure

🌎 Country	🕐 Time Zone	🔁 Scenario
🇯🇵 **Japan**	GMT+9	Sends Yen in early hours
🇩🇪 **Germany**	GMT+1	Yet to open → fails before sending Euros
⚠️ **Result**	—	Japan loses its Yen without receiving Euros (Total loss!)

🛡️ How Banks Manage Settlement Risk

Banks apply **credit limits per counterparty** to cap risk:

🧾 Credit Controls	📝 Description
💳 **Maximum Outstanding Limit**	Caps total exposure at any time with a single counterparty
📅 **Daily Delivery Limit**	Restricts daily currency delivery to reduce loss in case of failure

✅ Global Solutions:

- **Real-Time Gross Settlement (RTGS)** systems
- **Payment vs. Payment (PvP)** frameworks

- Unified **GMT-based books** to eliminate time lags

🧩 Summary Table – Exchange & Settlement Risk

📌 Risk Type	📝 Definition	💥 Potential Impact	🛡️ Mitigation Strategy
💱 **Exchange Risk**	Currency fluctuation after contract but before settlement	Financial loss on payables/receivables	Immediate covering, RBI limits, stop-loss
⏳ **Pre-settlement Risk**	Default before contract maturity	Partial loss (market difference)	Counterparty credit assessment
🕰️ **Settlement Risk**	Default during actual fund transfer (time zone issue)	Total loss of funds delivered	PvP systems, RTGS, time zone sync (GMT)

#3

💧 C. Liquidity Risk – When Markets or Funds Dry Up

funding Risk

Liquidity risk arises when a party involved in a forex transaction is **unable to meet its funding requirement** or **execute a deal at a reasonable price**.

Market liquidity Risk
Asset liquidity Risk

🔁 It's also the risk of not being able to **exit or offset a position** quickly due to market illiquidity.

💡 Real Example – USD Deal

🔷 An Indian bank purchases USD against INR. However, its **USD nostro account lacks sufficient funds**.

➡️ The bank cannot borrow or buy USD at a reasonable rate in time.

🎯 Result: **Liquidity risk is triggered**.

📊 Key Characteristics of Liquidity Risk

⚠️ Risk Scenario	💥 Consequence
#1 **Inability to fund forex settlements**	Delayed payments or failed contracts
Market becomes illiquid #2	Cannot liquidate positions without significant cost
High bid-offer spreads #3	Reduced profitability or forced losses

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🛡️ Managing Liquidity Risk

ALM

To mitigate liquidity risk, banks must:

- Maintain **strong cash/funds management**
- Control **asset-liability maturity mismatches**
- Set **maturity mismatch limits** and **open position limits** either overbought oversold

🧾 Control Measures	🔍 Purpose
✅ **Maturity Mismatch Limit**	Avoid timing mismatches in cash inflows/outflows
📉 **Reduce Open Position**	$\boxed{\text{Minimize exposure that can't be exited quickly}}$
🔄 **Funds Management System**	Ensure real-time funding capability

🌍 D. Country Risk & 👑 Sovereign Risk

Part 2 CH-2 A BFM

Country risk arises when a **foreign entity (private or sovereign)** is **unable or unwilling to fulfill obligations** due to **external, non-commercial factors**.

🧠 Key Triggers of Country Risk

🧱 Trigger	📌 Description
💱 Exchange Controls #1	Local government restricts foreign currency flows
📜 Regulatory Restrictions #2	Sudden laws or directives block payments
📉 Economic Instability #3	Issues like BOP crisis, low forex reserves
⚖️ Legal Restrictions #4	Foreign laws prevent honoring of existing contracts

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💡 Real Example – Externalization Risk

A company in Country A wants to repay its USD loan to a bank in India.

However, Country A's central bank imposes **currency controls** restricting outward remittance.

🎯 Though the borrower **intends to repay**, it is **legally restricted** — this is **country risk**.

👑 Sovereign Risk – A Special Case

Sovereign risk arises when the **foreign government or its agency** itself is the counterparty.

👑 Sovereign Risk Features	💥 Impact
Government has sovereign immunity #1	No legal recourse available to affected parties
Policy or regime change #2	Existing contracts may become invalid
No intent to default #3	But **external laws** may prohibit compliance

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📊 Managing Country/Sovereign Risk

🛡️ Risk Mitigation Techniques	✅ Description
🌐 **Country-wise Exposure Limits** #1	Set maximum allowable risk by country
📈 **Regular Monitoring of Difficult Countries** #2	Continual reassessment of high-risk zones
⚖️ **Third-country Jurisdiction Clauses** #3	Legal contracts governed by neutral countries
📝 **Sovereign Risk Disclaimers in Contracts** #4	Limit bank's exposure to unforeseeable foreign legal changes

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💹 E. Interest Rate Risk – The GAP Trap

Also known as **GAP risk**, interest rate risk is the potential **financial loss due to unfavorable movements** in interest rates or rate differentials.

🔍 When & How Does It Occur?

Banks engage in: $\boxed{4\%}$

- Spot & forward currency trades 💱
- Borrowing/lending in foreign currencies 💸
- Derivative contracts like **swaps**, **futures**, or **options** 📉

➡️ These activities rarely match perfectly in terms of cash flow timings or interest basis ➡️ this **mismatch is called a GAP**.

💡 **Real Example –** A bank borrows at **LIBOR + 1%** and lends at a fixed rate of **5%**.

If LIBOR increases significantly, the cost of borrowing rises, **narrowing or reversing the spread**.

🎯 Result: **Interest rate risk.**

Forward points = $\dfrac{\text{Spot Rate} \times \text{Fwd period} \times \text{Int Rate Diff}}{360 \times 100}$

📊 Types of Interest Rate Risk

📌 Risk Type	🔍 Explanation
🔁 **Forward Differential Impact** #1	Forward rates change with interest rate movement, affecting swap/forward contracts
#2 🧮 **Cash Flow Mismatches**	Irregular inflows/outflows due to asset-liability misalignment
🌡️ **Basis Risk** #3	Different interest bases (e.g., LIBOR vs SOFR) fluctuate at different rates (2% ↗, ↗ 1.5%)
📉 **Spread Risk** #4	Unanticipated narrowing of the spread between borrowing and lending

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🛠️ Managing Interest Rate Risk

🧾 Risk Control Strategy	🔍 Purpose
📉 **Individual & Aggregate GAP Limits** #1	Caps total mismatches in exposure
📈 **Sensitivity Analysis / Interest Rate Projections** #2	Forecast profit/loss scenarios under different rate environments
📊 **Value at Risk (VaR) / Interest Rate Sensitivity Test** #3	Measure & quantify exposure
💱 **Derivatives (Swaps, FRAs, Options)** #4	Hedge against adverse rate movements

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🧩 Summary Table – Liquidity, Country & Interest Rate Risks

🔍 Risk Type	📝 Definition	💥 Impact	🛡️ Mitigation Tools
💧 Liquidity Risk #1	Inability to fund obligations or exit positions quickly	**Delays, high-cost trades, default**	Maturity matching, cash management, position limits
🌍 Country Risk #2	Foreign counterparty unable/unwilling to pay due to external laws/regulations	**Blocked payments, legal complications**	Country exposure limits, disclaimers, legal clauses
👑 Sovereign Risk #3	Foreign government itself defaults or changes contract terms	**No legal recourse, total loss**	3rd country jurisdictions, sovereign disclaimers
💹 Interest Rate Risk #4	Financial loss from fluctuating interest rates or mismatches (GAP)	**Lower spreads, cash flow mismatches**	GAP limits, swaps, FRAs, sensitivity testing

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⚙️ F. Operational Risk – Risks from Within

Operational risk arises due to **failures in internal processes**, **information systems**, **human errors**, or **infrastructure deficiencies**, especially within a **dealing room**.

⚠️ What Can Go Wrong?

🔍 Source of Risk	💥 Impact
💻 Computer system failure #1	Halt in trading, delayed settlements, missed opportunities
☎️ Communication breakdown #2	Inability to confirm or execute trades

👨‍💼 **Human error or negligence** #3	Incorrect bookings, unauthorized deals, regulatory violations

💡 **Real Example**: A dealer enters the wrong amount in a forex trade due to a manual input error. Without system validation or immediate oversight, it leads to a **major financial loss** and non-compliance with internal limits.

🛡️ Mitigating Operational Risk

To contain operational risk, banks should implement:

🛠️ Control Measures	🔍 Description
🖥️ **State-of-the-art IT infrastructure** #1	Reliable, secure, and fast systems for trade execution
🔁 **Back-up systems (Mirroring)** #2	Duplication of data & systems at remote sites
🧯 **Disaster Recovery & Contingency Plans** #3	Plans to resume operations in case of total failure
👥 **Manpower redundancy** #4	Alternate staff availability during crises

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⚖️ G. Legal Risk – Risk of Contracts Going Void

Legal risk occurs when a transaction is **not legally enforceable** due to:

- 🚫 Lack of legal authority or capacity by the counterparty
- 📜 Violation of legal/regulatory guidelines
- ❌ Misinterpretation of applicable rules/laws

💡 **Real Example – Invalid Counterparty Deal:** A trader enters a forex swap with a counterparty that is later found to lack regulatory clearance to trade derivatives.

🎯 The contract becomes **unenforceable**, exposing the bank to loss.

🔍 Elements of Legal Risk

⚠️ Issue Type	📝 Description
❌ Incapacity #1	Counterparty lacks legal status to contract
📝 Documentation Errors #2	Missing or flawed clauses leading to disputes
📉 Regulatory Non-compliance #3	Breach of laws/guidelines leads to fines or voided agreements
🤝 Dispute over Jurisdiction #4	Courts disagree on applicable legal authority

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🛡️ Legal Risk Management Measures

🧾 Legal Safeguard	🔍 Purpose
📘 Standardized Legal Documentation #1	Use templates vetted by legal experts
⚖️ Third-party Legal Review #2	Especially for large/value-based transactions
🌐 Jurisdiction Clauses #3	Clearly state applicable laws and courts in contracts
🛑 Counterparty Legal Vetting #4	Verify licenses, registration, and regulatory clearances

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📊 Risk Management Framework – Structured Control of Risks

Managing risk begins with **identifying and assessing** the risk.

#1 Identify
#2 Quantification

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🔍 Can All Risks Be Measured?

📌 Risk Type	📊 Quantifiable?	🧠 Measurement Tools
💱 Exchange / 💹 Interest Rate Risk	Yes	Value at Risk (VaR), gap analysis, scenarios
🌍 Country / ⚙️ Operational Risk	Not fully quantifiable	Qualitative assessment, limits, controls
⚖️ Legal Risk	No	Legal audits, documentation reviews

🔄 Risk Management: Process & Policy

A robust risk management system involves:

🏛️ Top-Level Policy Setting

- The **Board of Directors** sets:
  - 📘 Detailed risk policy
  - 🎯 Limit structures
  - 🎯 Risk appetite vs. reward expectation

Ultimate responsibility

👨‍💼 Implementation by Management

- Provides:
  - 👩‍💼 Trained manpower
  - 🖥️ Required tools & tech
  - 📈 Monitoring & reporting systems
  - ✅ Regulatory compliance assurance

🔄 Continual Monitoring & Review

- Risk profiles, limits, and tools must be:

- Regularly reviewed
- Updated based on changing market dynamics

Core Components of a Risk Management Framework

Component	Function
Risk Policy #1	Defines goals, roles, acceptable risk levels
MIS (Management Info System) #2	Provides timely, accurate data for decision-making
Risk Measurement Tools #3	VaR, duration analysis, sensitivity analysis
Risk Limits #4	Set boundaries for acceptable exposures
Review & Reporting Mechanism #5	Tracks breaches and ensures accountability

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Final Summary Table – Operational, Legal & Risk Management

Area	Definition / Purpose	Risk Exposure	Mitigation Tools
Operational Risk #1	Internal failures: systems, people, processes	Missed trades, incorrect deals, reputational loss	Backup systems, disaster plans, automation, mirroring
Legal Risk #2	Transaction not legally valid or enforceable	Contract disputes, penalties, nullified deals	Legal vetting, proper documentation, jurisdiction clauses
Risk Management #3	Structured process to identify, measure & manage risk	Inadequate policies lead to uncontrolled risk	Board-set policies, limits, MIS, sensitivity analysis, VaR tools

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BoD FEDAI

RBI

📘 Guidelines for Risk Management in Forex Operations

The **broad risk policy** approved by a bank's **Board of Directors**, and implemented by its **top management**, must comply with the **regulatory guidelines** issued by:

- 🏦 **Reserve Bank of India (RBI)**
- 🧾 **Foreign Exchange Dealers' Association of India (FEDAI)**

These guidelines aim to ensure **safe and controlled** foreign exchange operations.

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📜 RBI's Internal Control Guidelines (ICG)

RBI's **Internal Control Guidelines (ICG)** cover various areas related to **forex dealing room operations**, such as:

- 📍 Code of conduct for dealers and brokers
- 💻 Setup of dealing rooms and back offices
- 📊 Risk control framework and limits

ICG

🛡️ Key Dealing Limits under ICG

🔢 Limit Type	📝 Description
🌙 Overnight Limit #1	Maximum exposure a bank can hold **after market hours** (i.e., overnight)
🌞 Daylight Limit #2	Maximum exposure allowed **during the day** for trading or client deals
📆 Gap Limit #3	Limits on **inter-period/month exposures** (unhedged forward positions)

Counterparty Limit	Max exposure allowed on **a single counterparty** #3
Country Risk Limit	Max exposure allowed to **a particular country** #4
Dealer Limit #5	Max exposure that an **individual dealer** can take during operations
Stop Loss Limit #6	Max **adverse rate movement** allowed before the position must be exited
Settlement Risk Limit #7	Max amount maturing with **a single counterparty on a specific day**
Deal Size Limit #8	Cap on size of **individual forex deals** to limit operational risk

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Additional Risk Controls Imp

Banks also implement limits on:

Control Area	Description
Value at Risk (VaR) #1	Statistical measure to quantify potential portfolio loss
Currencies Traded #2	Authorized currencies for trading by bank/dealers
Nostro Balance Limit #3	Max permissible funds in foreign accounts
Overdraft Limits #4	Caps on OD facilities in nostro accounts
Approved Broker Panels #5	Only empaneled brokers allowed for trading

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RBI's Master Circular – Risk Management & Interbank Dealings

RBI's Master Circular provides a **comprehensive framework** for:

- **Risk management tools for residents/non-residents**
- **Hedging of forex exposures**
- **Authorized dealer facilities**
- **Documentation & reporting norms**

🔍 What the Circular Covers

📘 Section	📝 Summary
📉 Forward Contracts #1	Booking allowed based on exposure or past turnover
Vanilla 🔀 Interest Rate Swaps / Options #2	Guidelines for structured interest rate hedging
💱 FX Derivatives for ADs #3	Rules for dealers to hedge foreign currency assets/liabilities
🤝 Interbank Dealings	Procedures, deal size limits, gap norms, position limits
🌍 FCY Accounts / Lending / Borrowing	Norms for foreign currency accounts, loans, borrowings
📄 Reporting to RBI	Mandatory reports on exposures and positions

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🇮🇳 Settlement Risk Mitigation – Indian Scenario

India has a specialized solution for mitigating **settlement risk** in forex and money markets:

🧱 CCIL – Clearing Corporation of India Ltd.

🛡️ CCIL acts as a **central counterparty** to interbank deals, especially in:

- 🔁 **Repos**
- 🧾 **CBLOs (Collateralized Borrowing and Lending Obligation)**
- 📜 **Government securities (gilts)**
- 💱 **USD/INR forex deals**

🧠 How CCIL Works

🔍 Feature	📝 Explanation
🧾 Netted Settlement	Only **net amount** (payable/receivable) is settled for each participant
🤝 Member-only Access	Both parties in a forex deal must be CCIL members
🛡️ Settlement Guarantee Fund (SGF)	Covers defaults using a common pooled fund
📁 Deal File Submission	Participants submit trade details for netting and settlement

💡 **Example**: Bank A and Bank B are both CCIL members. Each submits their forex trade files to CCIL.

Instead of settling multiple trades individually, CCIL **nets** them and only one **final INR & USD transfer** is done. This **reduces both liquidity and settlement risk.**

🧩 Summary Table – Risk Guidelines & Settlement Controls

📌 Area	📝 Description	🎯 Risk Mitigation Tool / Limit
🏛️ RBI's ICG	Framework for forex operations & internal control	Deal limits, counterparty/country/position exposure caps
📗 RBI Master Circular	Comprehensive risk & derivative guidelines	Forward contracts, swaps, options, AD permissions
🛑 Settlement Risk	Risk of counterparty failure during transaction closure	CCIL net settlement, SGF, member-only access Gilts Repos CBLO USD/INR

8 Rules

🏦 FEDAI	Operational procedures and best practices	Dealer conduct, market discipline
		RBI + FEDAI
📊 Internal Bank Policy	Limits as per risk appetite and capital	Stop loss, VaR, nostro limits, broker panel, jurisdiction rules

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💹 What Are Derivatives – History and Development

Derivatives are often viewed with **a sense of mystery or complexity**. However, their foundation is straightforward — a derivative is a **financial instrument whose value is derived from another asset**, known as the **underlying**.

📘 Definition

A **derivative** is a contract whose value depends on the price of an underlying asset, index, rate, or variable.

🔁 Relationship with the Underlying

Even if an investor holds no direct interest in the underlying asset, the **price movement of the underlying directly impacts the value of the derivative** — and vice versa.

🌐 What Can Be the Underlying?

🧱 Type of Underlying	💡 Examples
🌾 Commodities #1	Agricultural goods, oil, gas, metals like gold/silver
💱 Currencies #2	USD, EUR, INR, JPY
💹 Interest Rates #3	LIBOR, SOFR, Repo rates

#4 📊 Financial Instruments	Treasury bills, government bonds, corporate debt
📈 Stock Indices #5	SENSEX, NIFTY, S&P 500
📉 Equity Shares #6	Individual company stocks

📜 Historical Evolution of Derivatives

Although the formal term "derivative" is modern, the **concept dates back centuries**.

🕰️ Early Usage

- 🏯 **Japan (Edo period)**: Farmers sold rice produce for future delivery.
- 🚢 **High Seas Trade**: Merchants priced goods for future delivery.

⚖️ Major Milestones in Derivatives Development

📅 Year	🌍 Milestone
1971	Collapse of **Bretton Woods System** and USD delinking from gold
Early 1970s	📍 **Chicago Mercantile Exchange** launches **currency futures**
1975	📈 First **interest rate futures** introduced
1983	🏛️ **Philadelphia Stock Exchange** launches **currency options**
Early 1980s	🔄 Introduction of **interest rate swaps**
Mid-1980s	🌐 Surge in **commodity, interest rate, and exchange rate derivatives**

💡 Trigger for Market Explosion:

Volatility in exchange and interest rates post-Bretton Woods collapse led to **demand for hedging tools**, igniting global derivative market growth.

🎯 Who Uses Derivatives?

👥 Participant	📌 Purpose
🧾 Hedgers	Manage risk in real asset or liability (e.g., exporters, importers)
🧠 Speculators	Take directional bets on market movements
🧮 Arbitrageurs	Profit from **mispricing across markets** by executing simultaneous trades

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💹 Impact on Financial Markets

Derivatives provided **risk management tools** that:

- Boosted **global trade** 🌍
- Enhanced **investment flows**
- Encouraged **financial innovation**
- Expanded market participation

📈 By **adding liquidity, depth, and pricing efficiency**, derivatives became essential instruments in modern finance.

🌐 Growth Explosion – Derivatives Market Stats (BIS Data)

📅 Time Period	🔢 Market Statistics
April 1988	💵 Daily average derivatives turnover: **USD 1.3 trillion**
June 1998	🔄 Notional outstanding for OTC contracts: **USD 72 trillion**
	📈 Notional outstanding for exchange-traded contracts: **USD 14 trillion**

⚙️ Key Drivers of Derivative Market Growth

🚀 Factor	🔍 Description
📉 Increased Volatility #1	In FX, interest rates, and commodities → need for hedging tools
🛢️ Oil Shocks (1971 onwards) #2	Sudden price surges increased market uncertainty
🌍 Globalization #3	Cross-border investments exposed businesses to multi-currency risks
🕒 Real-time Trading Platforms #4	Enabled 24x7 global trading
🧮 Advanced Pricing Models #5	Developed using computing power (e.g., Black-Scholes, Monte Carlo methods)
👨‍💼 Professional Market Participants #6	Banks, corporates, traders adopted derivatives for risk mitigation
🏦 Product Innovation #7	Rise in futures, swaps, options, and structured derivative products

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🧩 Summary Table – Derivatives: History & Development

📌 Topic	📝 Key Details
🔁 Underlying Assets #1	Commodities, currencies, interest rates, bonds, stock indices, etc.
🧱 Historical Use #2	Futures and options in Japan and maritime trade
🗓️ Key Milestones	Currency futures (1970s), interest rate swaps (1980s), options (1983)
📈 Market Participants	Hedgers, speculators, arbitrageurs
🚀 Growth Drivers	Volatility, globalization, tech innovation, market professionalism

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