

Foundations of Risk Management

Equity Risk

Market Risk

Interest Rate

Risk

Currency Risk

Credit Risk

Commodity Risk

Corporate Risks

Downgrade Risk

Operational Risks

Bankruptcy Risk

AML Risk

Business, Strategic & Reputation Risks

Cyber Risk

Model Risk

Trading Risk

Market Risk

Gap Risk

Specific Risk

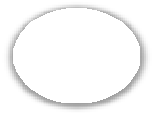
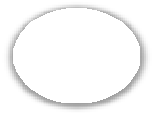
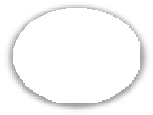
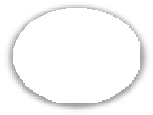
Portfolio Concentration Risk

**1** Identify

Name, Categorize, Understand

Analyze **3**

Rank, Score, Measure, Quantify



Evaluate

**2 4**

Manage

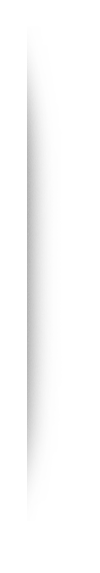
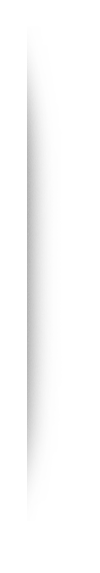
Avoid, Retain, Mitigate, Transfer

Assess Impact

Effects, Knock-Ons, Repercussions

**Second Building Block: Distinction between Known and**

**Unknown Risks**

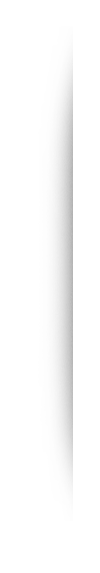
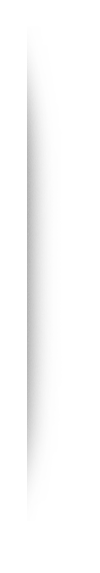


**Expected Loss**

**Unexpected Loss**

**Knightian Uncertainty (Known Unknowns)**

**Unknown Unknowns**



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# Third Building Block

Distinction between Expected and Unexpected Losses

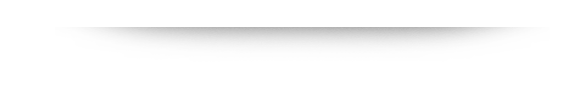
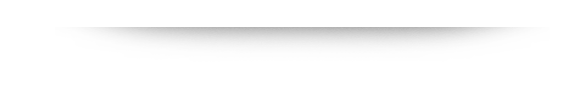
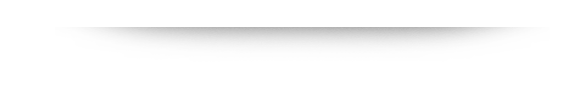
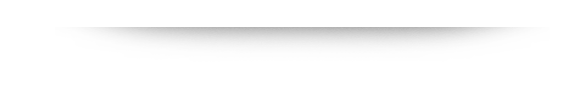
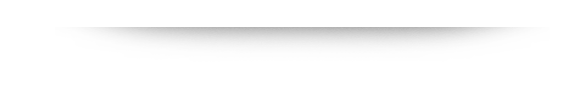
Expected losses: Average losses that can be ascertained with a high degree of confidence

* EL = PD \* LGD \* EAD

Expected loss is covered through provisions

Unexpected Loss: The losses that deviate from the expected loss

Unexpected loss is covered by setting aside capital



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**Identify Risk Appetite**

* Identify key corporate goals and risks.
* Should we manage risk? Which risks should we manage?
* Create a risk appetite statement.

**Map Risks, Make choices**

* Map risks.
* Assess and measure risk impact.
* Perform risk reward analysis of risk management strategy.
* Choose basic strategy/tactics.

**Operationalize Risk appetite**

* Express risk appetite in operational terms.
* Set risk limit framework.
* Right size risk management team.

**Implement**

* Choose instruments to manage risks.
* Make day to day decisions.
* Establish oversight.

**Re-evaluate regularly**

* It is a continuous and dynamic process.
* As business evolves, risks change...New risks emerge, old ones may no longer have same impact.

Amount and types or risk a firm is willing to accept. It is the amount of risk a firm is happy to bear an any point in time. Detailed risk appetite statement is an internal document that is subject to board approval

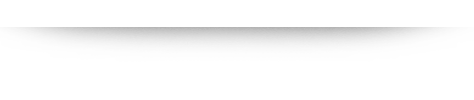
Risk Appetite

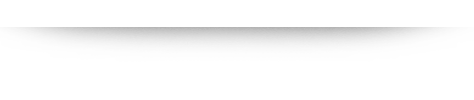
Maximum amount of risk a firm can absorb

Risk Capacity

Defines boundaries or limits of risk which the firm is willing to accept

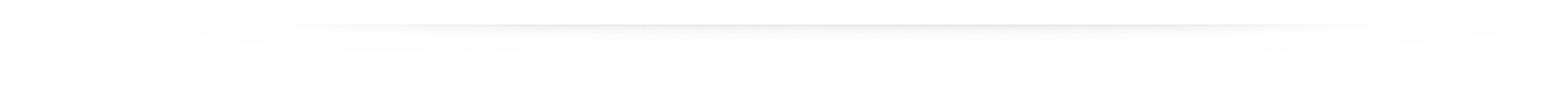
Risk Tolerance





# Risk Management Toolbox

|  |  |
| --- | --- |
| **Instrument Type** | **Defining Features** |
| Forward | Tailored agreement to exchange a specific quantity of underlying at a pre agreed price at a future date. Either physically delivered or cash settled |
| Future | Exchange listed forward with standardized terms, subject to margining and MTM |
| Swap | Agreement to exchange cash flows linked to an underlying index/benchmark. Fixed vs floating IRS |
| Call Option | Buyer has right to buy the underlying asset at the strike price at a certain rate in future or a window period. Pays premium to get that right |
| Put Option | Buyer has right to sell the underlying asset at the strike price at a certain date in future or a window period. Pays premium to get that right |
| Exotic Option | Example: Barrier options, Binary options, Lookback options, Compound options |
| Swaption | It is an option to enter into a swap at a later date |



**Corporate Governance Principles for Banks**

Boards overall Responsibilities Board has ultimate responsibility of bank’s strategic objectives, governance

framework and corporate culture

Boards Qualification and Compensation Board members should be qualified, individually and collectively Board’s Own Structure and Practices Composition of independent, executive directors, etc.

Senior Management Should act under oversight of board and report accurately Governance of Group structures Board of parent firm has ultimate responsibility

Risk Management function Independent function headed by CRO

Risk Identification, Monitoring, Controlling Risks should be measured and monitored continuously

Risk Communication Important within departments and between senior managements and board

Compliance Board should establish a compliance function

Internal Audit Should provide independent assurance to board

Compensation Compensation should facilitate sound corporate governance

Disclosure and Transparency Disclosures to concerned stakeholders should be accurate, timely and complete

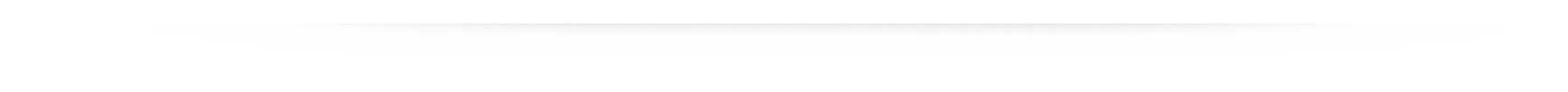
Role of Supervisors Responsible for comprehensive evaluation. Regular interaction with board and senior

management

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# Risk Policies, Limits and Management Oversight



|  |  |  |  |
| --- | --- | --- | --- |
| **Risk** | **Overarching Framework/ Policy** | **Risk Limits** | **Management Oversight** |
| Credit | Credit Risk Management | Credit Concentration Limits | Credit Committee Global Risk Committee |
| Market | Capital Markets Risk Management Policy | Market Risk Limits | Capital Markets Authorized Products Committee, Global Risk Committee, Global Asset Liability Committee |
| Operational | Operational Risk Management Policy, Control Framework | Key Risk Indicators | Operational Risk Management Committee, Global Risk Committee |
| Reputation | Reputation Risk Management Framework and Policy | Key Risk Indicators | Reputation and Legal Risk Committee |
| Liquidity | Liquidity Risk Management Policy | Liquidity and Funding limits, Pledging limits | Global Alco, Global Risk Committee |
| Strategic | Strategic Planning Policy | Risk Appetite statement | Executing Committee |
| Regulatory | Regulatory Compliance Management Policy | Key Risk Indicators | Global Risk Committee |

Purchasing insurance from third party guarantor or underwriter

Netting of exposures to counterparties

Mark to Market / Margining

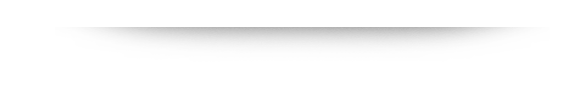
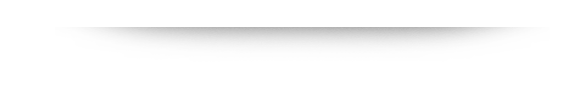
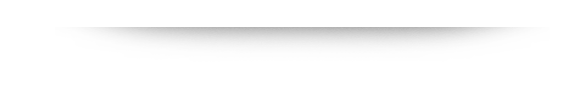
Requiring collateral be posted

Termination/Put Option: Unwinding in case of a trigger event such as downgrade, balance sheet metrics

Reassignment of credit exposure to another party in case of predefined trigger such as a downgrade

**Self-Reinforcing Securitization Chain**

Investors



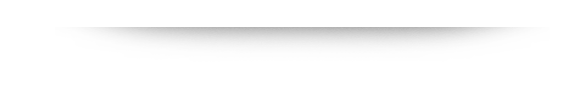
Loan Origination

Compensation was tied to high loan volumes and high commission mortgages, not subsequent loan performance or suitability

As monetary policy turned highly accommodative, investors started chasing yields

Securitization

High fee earning, complex and opaque product issuance soared requiring advanced financial engineering and large quantities of underlying loans



Credit Rating Agencies

Some securitized products were awarded ratings higher than fundamentals suggested

|  |  |
| --- | --- |
| **Traditional Risk Management** | **ERM View** |
| Risk viewed in business line, risk-type and functional silos | Risk viewed across business lines, functions, risk types looking at diversification and concentration |
| Risk Managers work in isolation | Risk team integrated using global risk management committee and CRO |
| Many different risk Metrics that cannot be compared | Development of rational risk management frameworks and cross-risk universal metrics |
| Risk aggregated, if at all, within business lines and risk types. Difficulty seeing the aggregate risk picture | Tools and integrated frameworks make it possible to more accurately measure and track enterprise risk |
| Each risk type managed using risk specific transfer mechanisms | Possibility of cutting risk transfer costs firm wide and integrated instruments |
| Each risk management approach (avoid/retain/mitigate/transfer) often treated separately, with strategy rarely being optimized | Each risk management approach is viewed as one component of a total cost of risk, ideally measured in a single currency |
| Impossible to integrate the management and transfer of risk with balance sheet management and financing strategies | Risk management is increasingly integrated with balance sheet management, capital management and financing strategies |

# Principles for Effective Data Aggregation and Risk

**Reporting**

Effective risk analysis requires sufficient and high-quality data.

Data acquisition plays an important role in model risk. Models depend on quality of input data.

BCBS published a set of 14 principles to help banks overhaul risk data aggregation and reporting capabilities (BCBS 239).

BCBS 239 was a major driver in the creation of Chief Data Officer post.

If a bank adheres to BCBS principles, its risk managers will have less uncertainty regarding the accuracy, integrity, completeness, timeliness, and adaptability of the data they use.

A bank should design, build, and maintain data architecture and IT infrastructure that fully supports its risk data aggregation capabilities and risk reporting practices, not only in normal times but also during times of stress.



Thank You!

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