In the wake of the recent upheavals, market risk and asset liability management is undergoing significant change with stringent risk assessments. Regulators have begun to demand more transparency. They want to know the market risk profile, including short term profit and loss (P&L) volatilities and long term economic risk, understand how much risk has been accumulated by the banks and how the aggregate risk compares with the bank’s approved risk appetite. Further, new regulations have a potential of creating bigger regulatory burden for banks. Effective market risk management can therefore help banks to navigate the ever-changing regulatory and business landscapes.

**Risk management is the leap from simple risk controls to risk intelligence, which can identify the potential business growth opportunities.**

**Key challenges:**

- Impact of regulation on business and implementing responses to regulatory changes
- Dealing with numerous complex and diverse regulatory regimes globally
- Lack of internal resources and subject matter expertise
- Optimization of risk measurement and management
- Continuous developments in Risk Governance and Processes
- Demonstrating appropriate compliance and controls of market risk
- Management and implementation of global and local regulatory requirements
- Anticipation of regulatory expectations
- Increasing demand for regulatory capital reserves
- Challenges in integration and reconciliation of data amongst various systems

In our experience, the regulatory and governance monitoring landscape suggests that a centralized approach to risk management is required to address current and future market risk challenges.

**Market Risk & ALM: Key Service Offerings**

<table>
<thead>
<tr>
<th>Market Risk identification, measurement and assessment</th>
<th>Systematic process to identify, measure and / or estimate risks through quantitative and qualitative assessment</th>
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<td></td>
<td>Benchmark the Risk Management Practices with best-in-class practices and provide recommendations</td>
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<td>Implementation of Integrated Risk Management, Basel II Advanced Approaches and system implementation specifically for market risk</td>
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<th>Capital Planning</th>
<th>Calculation and measurement of Economic Capital</th>
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<td>Capital computation as per Standardized Approach of Revised Market Risk Guidelines i.e. FRTB Guidelines of BCBS.</td>
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<td>Identifying gaps in existing data, process and systems</td>
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<th>Risk Based Performance Management</th>
<th>Computation of Risk Adjusted Return on Capital (RAROC) and Economic Value Added (EVA)</th>
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<td></td>
<td>Evaluation of Treasury Portfolios and recommend risk based portfolio optimization</td>
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</table>
| **Standardised Approach for Counterparty Credit Risk (SACCR):** | Measurement of SACCR for the derivative instruments on the Bank’s banking and trading books  
Measurement of potential future exposure (PFE) and replacement costs (RC) under SACCR |
|--------------------|----------------------------------------------------------------------------------|
| **Credit Value Adjustment (CVA):** | Computation of Basel III credit value adjustment (CVA) and debit value adjustment (DVA) capital charge  
Computation of Discounted Cash Flows and Standardized Approach as per the Basel III Guidelines |
| **Interest Rate Risk in the Banking Book (IRRBB):** | Assistance in regulatory capital treatment and supervision of IRRBB  
Development of interest rate risk framework as per regulatory guidelines  
Computation of economic value measure i.e. economic value of equity (EVE) and earnings measure i.e. net interest income (NII)  
Generation of interest rate shock scenarios (parallel and non-parallel) and conducting reverse stress testing under IRRBB  
Implementation of BCBS 368 guidelines including Conditional Prepayment Rate (CPR) modelling for asset classes, Term Deposit Redemption Rate (TDRR) modelling and Non Maturity Deposits (NMD) behavioural modelling |
| **Stress Testing:** | Generating stress testing scenarios as per the regulatory requirements and industry best practices  
Stress Testing for Market Risk based on Indian and Global Risk factors  
Assistance in Scenario and Sensitivity Analysis  
Generation of complex scenarios in valuation engines like R and FinCAD |
| **Reverse Stress Testing:** | Review of existing reverse stress testing themes, quantification methodology  
Reporting of reverse stress test results and MIS framework, including methods and templates used |
| **Model Risk:** | Development of challenger and champion models for business lines  
Conduct gap analysis of existing models  
Full life-cycle implementation of Model Risk Management – Liquidity Risk and Interest Rate Risk - (ALM) |
| **Model Validation:** | Validation of various market risk models and providing template  
Performing sensitivity analysis for models  
Validation of Stress Testing Module |
| **Fundamental Review of the Trading Book (FRTB):** | Assistance in implementation of FRTB framework  
Assistance in risk governance aspects, policies and procedures, limit framework, P&L Attribution, Trading Book/ Banking Book limit setting  
Development of FRTB compliant models and back testing eligibility criteria under FRTB  
Computation of FRTB capital charge as per the advanced approach and standardized approach  
Detailed benchmarking against peer practice for FRTB methodologies and models |
**Net Overnight Open Position (NOOP):**
- Validation and reconciliation of NOOP components between the front office and back/mid office
- Preparation of control Framework for monitoring the components of NOOP

**Asset Liability Management (ALM):**
- Development, implementation and review of ALM framework/ systems like OFSAA
- Assistance in integrating ALM data into a unique platform where the input data is managed from risk areas (e.g. liquidity and Interest Rate Risk)
- Establishing pricing mechanism to be adopted into suitable asset liability pools depending on the cash flow and risk characteristics

**Liquidity Risk:**
- Assistance in implementation of liquidity risk framework
- Computation of Basel III liquidity metric like liquidity coverage ratio (LCR) and net stable funding Ratio (NSFR)
- Performance of gap analysis of existing liquidity risk framework including processes, policies and governance structures and intraday liquidity reporting requirements
- Developing stress and reverse stress-testing models (qualitative and quantitative) for liquidity risk, ILAAP and behavioural modelling

**Market Illiquidity:**
- Framework for computation of market illiquidity as per the client’s positions Preparation of Market Illiquidity methodology
- Assistance in implementation of fund transfer pricing services

Deloitte also provides a host of customized solutions based on the need of clients.
The Deloitte Difference:

Industry Experience & Specialized Knowledge:
Deloitte’s professionals have extensive experience in managing large scale risk transformation projects and are supported by a team of Subject Matter Experts (SMEs) with extensive experience in risk and regulatory compliance engagements.

Centralized Quality Management:
Dedicated central quality review and management team prior to issuance of reports, conduct risk transformations.

Pan India Presence:
Dedicated multi-locational Financial Services Team across locations to effectively service all client locations.

Value Beyond Scope of Work:
Assist in periodic review of processes, provide issue repositories and insights based on multi-dimensional trend analysis.

Effective Delivery Model:
Robust delivery model with effective combination of execution, supervisor and quality review capabilities with global delivery model approach for project execution with seamless integration across global teams.

Capability to support increasing volumes:
Our capability to support our clients in conducting timely reviews with adequate resourcing support on need basis.

Our Experience and Specialization:

Deloitte named the global leader in Risk Consulting, based strategy and capability by IDC MarketScape.

Dedicated multi-locational Financial Services Team of over 175 members.

Experience of working with 10 large banks and the banking regulator in India and Middle East.

Deloitte has delivered multiple multi-year risk and finance transformation projects (Basel and other regulatory programs).

Deloitte has rich experience in India and across the globe, including the regulatory bodies, including working with the largest banks across the areas of Enterprise Risk Management (ERM), Risk & Capital Management and technology implementation.

Experience of providing services to the in-house departments and captive units of more than 30 banks, supporting them in finance, market risk & system initiatives.

Provided model validation, risk advisory and system automation services to more than 20 banks for delivering on multi-year risk transformation initiatives.

Worked with the largest public sector, private sector and foreign banks in India, providing credit risk, market risk, Basel II reporting and model development / validation services.