

FRTB-SA: A Data-Centric Approach to Market Risk Capital Management

FRTB Implementation Framework:

Executive Summary

The Fundamental Review of the Trading Book (FRTB) represents a paradigm shift in market risk capital requirements. This white paper examines implementation challenges and provides a strategic framework for financial institutions navigating this complex regulatory landscape.

1. Core Implementation Challenges

1.1 Data Architecture

- **Input Standardization**
 - Market data alignment
 - Risk factor mapping
 - Time-series consistency
 - Contributor dimension traceability
- **Data Quality Requirements**
 - Auditability frameworks
 - Data lineage documentation
 - Quality control mechanisms
 - Real-time validation processes

1.2 Technical Infrastructure

- **Calculation Engine Requirements**
 - Low latency architecture
 - Desk-level computation capabilities
 - Integration with existing systems
 - Performance optimization
- **System Integration**
 - Front Office alignment
 - Risk Management synchronization
 - Finance department coordination
 - Middle Office centralization

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2. Data Model Framework

2.1 Core Data Components

1. Market Data
 - Factor sensitivity curves
 - Real-time pricing feeds
 - Historical time series
 - Volatility surfaces
2. Position Data
 - Trade details
 - Portfolio composition
 - Risk exposure metrics
 - Hedge relationships
3. Reference Data
 - Instrument specifications
 - Counterparty information
 - Market identifiers
 - Rating information

2.2 Regulatory Data Requirements

- Risk weight calculations
- Correlation matrices
- Aggregation hierarchies
- Capital charge components

3. Implementation Strategy

3.1 Data Integration

1. Sensitivity Calculation
 - Factor mapping
 - Risk decomposition
 - Sensitivity aggregation
 - Validation frameworks

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2. Risk Factor Attribution

- Risk classification
- Factor decomposition
- Sensitivity mapping
- Delta calculations

3.2 Quality Control Framework

- Data validation rules
- Reconciliation processes
- Exception handling
- Audit trails

4. Infrastructure Development

4.1 System Architecture

- Modular design principles
- Scalability considerations
- Performance optimization
- Redundancy planning

4.2 Integration Points

- Front office systems
- Risk management platforms
- Regulatory reporting tools
- Data warehouses

5. Reporting Framework

5.1 Regulatory Requirements

- Daily capital calculations
- Risk factor analysis
- Backtesting results
- Model performance metrics

5.2 Internal Controls

- Limit monitoring

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- Position aging analysis
- Liquidity assessment
- Market risk metrics

6. Implementation Roadmap

6.1 Phase 1: Foundation

- Data quality assessment
- System gap analysis
- Infrastructure planning
- Resource allocation

6.2 Phase 2: Development

- System implementation
- Data model creation
- Integration testing
- Performance optimization

6.3 Phase 3: Validation

- Model validation
- System testing
- User acceptance
- Regulatory compliance

6.4 Phase 4: Production

- Go-live preparation
- Production migration
- Performance monitoring
- Continuous improvement

7. Risk Mitigation Strategies

7.1 Implementation Risks

- Data quality issues
- System performance
- Integration challenges

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- Resource constraints

7.2 Mitigation Approaches

- Early IT engagement
- Phased implementation
- Regular validation
- Continuous monitoring

8. Governance Framework

8.1 Organizational Structure

- Steering committee
- Working groups
- Subject matter experts
- Project management

8.2 Control Framework

- Policy development
- Procedure documentation
- Quality assurance
- Audit requirements

Conclusion

Successful FRTB implementation requires a comprehensive, data-centric approach focusing on:

1. Robust data architecture
2. Integrated systems
3. Strong governance
4. Continuous validation

Early engagement with IT teams and establishment of centralized data quality functions are crucial for meeting regulatory requirements while optimizing capital efficiency.

References

Basel Committee on Banking Supervision (BCBS) Guidelines BCBS-D457 Regulatory Framework Market Risk Capital Management Standards