

Implementing an AMA for Operational Risk

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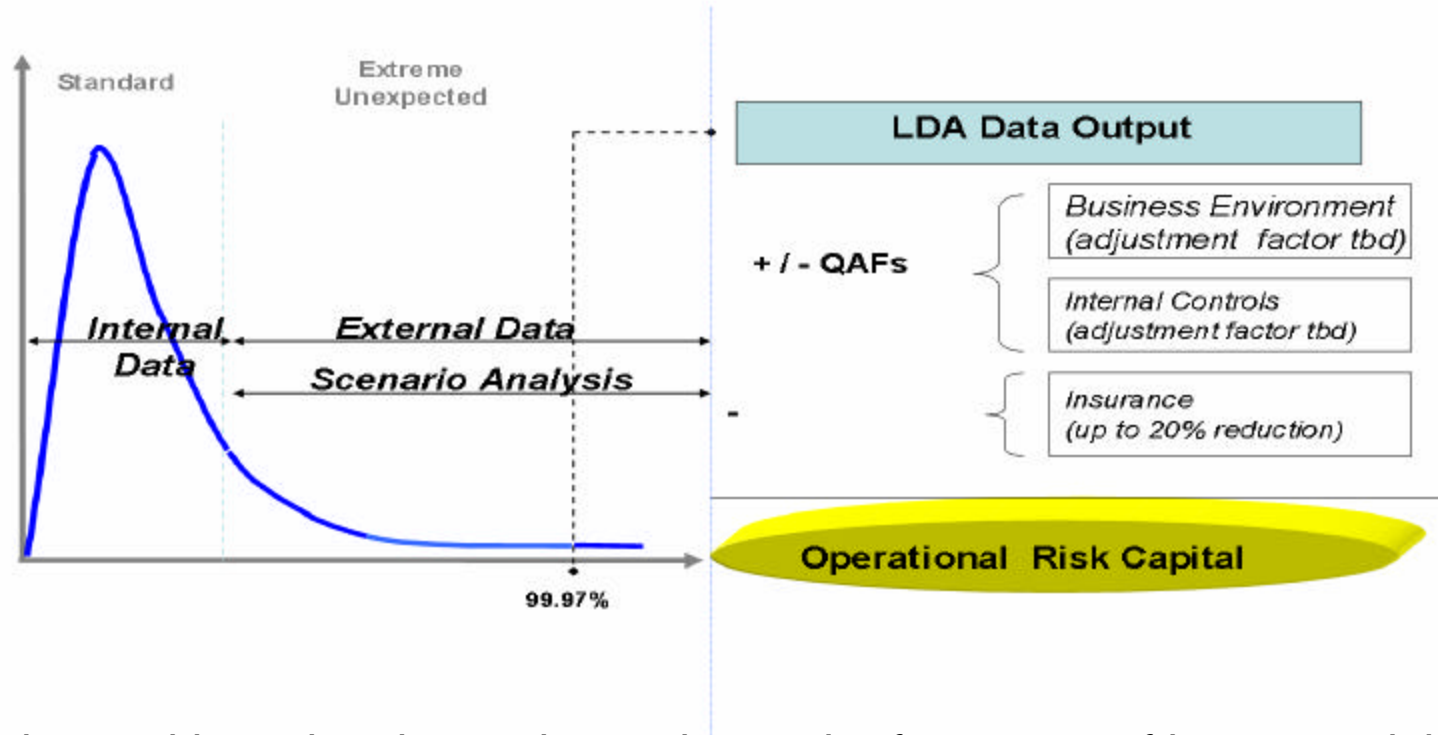
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- ❑ Leverage existing operational risk tools, processes, and culture
 - ✓ Governance structure
 - ✓ Internal loss data
 - ✓ Self-assessments
- ❑ Incorporate elements required for qualification
 - ✓ Internal data
 - ✓ External data
 - ✓ Scenario analysis
 - ✓ Business environment and internal control factors
- ❑ Design flexible processes and systems to enable improved measuring, monitoring, and reporting

State Street has chosen to use a Loss Distribution Approach (LDA) to estimate operational risk capital



- Robust internal loss data is used to estimate the frequency of losses and the severity distribution for losses under USD1million
- External data is used to capture tail events in the severity distribution only

☐ Internal Data

- ✓ Used to estimate frequency and severity distributions by event type
- ✓ Large number of data points for high frequency, low severity events
- ✓ Threshold set at USD500

☐ External Data

- ✓ Used to capture extreme events in severity distribution only
- ✓ Tail of severity distribution begins at USD1million to account for reporting bias
- ✓ Filtering logic applied to remove events not relevant to State Street

☐ Business Environment and Internal Control Factors

- ✓ Used to adjust the capital estimate at the top of the house
- ✓ Based on business area assessments

☐ Scenario analyses

- ✓ Used to supplement extreme events and may be used as data points in the estimation model

☐ Insurance

- ✓ Deductions for insurance will be investigated in the future

- ☐ Incorporation of external data appropriately
- ☐ Correlation and diversification
- ☐ Estimation of operational risk below the enterprise level
- ☐ Off-set for expected losses
- ☐ Estimation for event types with limited internal experience

- ❑ Combining all elements of the AMA framework to provide a comprehensive approach to Operational Risk
 - ✓ Incorporation of Key Risk Indicators
- ❑ Demonstrating value to key constituents
 - ✓ Development of business area and enterprise “scorecards”
- ❑ Creating consistent approaches to identification, measurement, management, and control but ensuring those closest to risk have flexibility