Implementing an AMA for Operational Risk

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May 20, 2005
Guiding Principles

- 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 USD1 million.

- External data is used to capture tail events in the severity distribution only.

![Diagram showing LDA Data Output with components: Business Environment (adjustment factor tbd), Internal Controls (adjustment factor tbd), and Insurance (up to 20% reduction).]
Modeling Approach, cont.

- **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 USD1 million 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