Enhancing Risk Management and Governance in the Region’s Banking System to Implement Basel II and to Meet Contemporary Risks and Challenges Arising from the Global Banking System

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Session 6.1

Operational Risk Management and Capital Regulation

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Operational Risk Management and capital regulation
A perspective of Chinese banking regulator

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At APEC workshop Shanghai, Dec 10
2008

Outline
- What is Op risk?
- Internal governance for ORM
- Key risk indicator
- Capital requirement for OR
- Loss distribution for OR
- Issues to implement ORM of Basle II
What is operational risk?

Operational Risk (OR) is the risk of loss resulting from inadequate or failed internal processes, human behaviour, systems, or from external events. The definition includes legal risk but excludes strategic and reputational risk.

Nature of operational risk

- Endogenous
- Diverse
- Dynamic / Non-stationary
- HFLS vs LFHS (cost / going-concern)
- Non FLLP

Impacts
Causes
Events
Complex causality

Organisational System
- Defences
- Stabilising
- Instability
- Triggers

Event ➔ Impact
Causality

- Basel Event type Category

  Internal Fraud, External Fraud, Employment Practices & Workplace Safety,
  Clients, Products & business practices, Damage to Physical Assets,
  Business Disruption & System Failure, Execution, Delivery & Process Management

It is important to identify systematically the causes, events and impacts of Operational risk

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Developing an appropriate Risk governance environment

Different level of authority will have different roles & responsibilities that need to be set clearly. For example:

**Operational Risk Committee**
- Assists the BOD to ensure op risks are managed in a manner consistent with the overall ORM policy as approved by the BOD.
- Initiates the development of minimum control standards to manage op risk.
- Evaluates control weaknesses and agrees on appropriate mitigation plans.

**Head of Risk Management**
- Is an integral member of the senior management team and reports to risk management committees.
- Ensures that all identified risks are managed effectively within appropriate and agreed risk parameters.

**Head of Operational Risk**
- Is the overall facilitator for ORM.
- Reviews op risk profile and carries out quality assurance reviews of control standards.
- Monitors and analyses risk indicators / loss data.

Can ORM function report to CEO?
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Monitor and report, Key Risk Indicators

KRI are sets of parameters for a business process which are assumed to be highly predictive regarding changes in the operational risk and control profile of that process.

- Key Risk Indicators allow the bank to pro-actively monitor the operational risk status
- Where do Key Risk Indicators come from?
The KRI Framework

KRIs are monitored against Thresholds
OPERATIONAL RISK

MANAGEMENT PROCESS

- Prevention measures are most important
- High likelihood & high level of operational risk (To Avoid)
- Not risk area. Problems in process, system design & quality mgmt.

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>LFHI (D)</td>
</tr>
<tr>
<td>High</td>
<td>HFHI (A)</td>
</tr>
<tr>
<td>Low</td>
<td>LFLI (C)</td>
</tr>
<tr>
<td>High</td>
<td>HFLI (B)</td>
</tr>
</tbody>
</table>

- Can put banks out of business or severe reputational harm.
- Difficult to understand.
- Similar issues facing other industries.

Small losses & low probability are acceptable if high costs of prevention

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BASIC INDICATOR APPROACH

• Capital charge is based on the average of a fixed percentage (alpha) of positive annual gross income (GI) over the previous 3 years

\[
\text{Capital charge} = \frac{\sum (GI_{1..n} \times \alpha)}{n}
\]

• GI: net interest income + net non-interest income as defined by national supervisors and/or national accounting standards

• \( \alpha = 15\% \)

• No qualifying criteria – encouraged to comply with sound practices paper

• Not expected to be used by internationally active banks or banks with significant operational risk exposures

THE STANDARDISED APPROACH

• Bank activities mapped to 8 business lines framework

• Capital charge for each business line calculated by multiplying an indicator by a factor assigned to that business line
  - Indicator: annual GI (as described in BIA)
  - Factor: beta (\( \beta \)) established by the BCBS

• Total capital charge is based on the 3 year average of the simple summation of the regulatory capital charges across each of the Business lines in each year

\[
\text{Capital charge} = \frac{\sum \text{years 1-3max}\{\sum (GI_{1..8} \times \beta_{1..8}), 0\}}{3}
\]
ALTERNATIVE STANDARDISED APPROACH

- Option available at national discretion
- Same as TSA except for two business lines
- For retail banking (RB) and commercial banking use 'loans & advances' instead of gross income
- The multiplier is set at 0.035

\[ RB \text{ Capital charge} = LAR_b \times 3.5\% \times \beta_b \]

- Capital for those other 6 business lines remain the same.

AMA & APPROACHES

<table>
<thead>
<tr>
<th>Concept</th>
<th>Main Input</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
</table>
| Loss Distribution Approach          | Internal and / or External data                 | • Objective, if data is representative and sufficient, complete and accurate.  
| (mainly top down)                   |                                                | • Well known statistical concepts can be used to establish the capital charge. |
|                                     |                                                | • Data might not be representative                                       |
|                                     |                                                | • Data scarcity                                                          |
|                                     |                                                | • Statistical concepts                                                   |
|                                     |                                                | • Backward looking                                                       |
| Scorecard approach                  | Risk and Control assessments                   | • Forward looking, if leading risk information (e.g. KRIs) is used.        |
| (mainly bottom up)                  |                                                | • Utilises business experience and intelligence.                          |
|                                     |                                                | • Subjective                                                             |
|                                     |                                                | • Aggregation issues                                                     |
|                                     |                                                | • Statistical concepts                                                   |
|                                     |                                                | • Less well developed                                                    |
| Scenario approach                   | Scenarios                                      | • Utilises expert experience and their views; methodologically to reduce bias. |
| (Top down and / or Bottom up)       |                                                | • Remains subjective                                                     |
|                                     |                                                | • Aggregation issues                                                     |
|                                     |                                                | • Issue of completeness (e.g. how many scenarios?)                        |
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Loss distribution for LDCE

<table>
<thead>
<tr>
<th>BUSINESS LINE</th>
<th>LOSS EVENT TYPE</th>
<th>% of total # of loss events</th>
<th>% of total gross loss amounts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retail Brokerage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Payment and Settlement</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corporate Finance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trading and Sales</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retail Banking</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Commercial Banking</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agency and Custody Services</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asset Management</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Sample of 89 banks, 47,269 loss events and €7.8 billion in OR-related losses reported in "The 2002 Loss Data Collection Exercise."
## Loss distribution for some local banks

<table>
<thead>
<tr>
<th>Loss causes</th>
<th>Event numbers</th>
<th>Number percentile</th>
<th>Amount percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human factors</td>
<td>1982</td>
<td>41.44%</td>
<td>54.66%</td>
</tr>
<tr>
<td>Internal process</td>
<td>1756</td>
<td>36.71%</td>
<td>32.09%</td>
</tr>
<tr>
<td>External events</td>
<td>525</td>
<td>10.06%</td>
<td>12.35%</td>
</tr>
<tr>
<td>System factors</td>
<td>521</td>
<td>10.89%</td>
<td>0.10%</td>
</tr>
</tbody>
</table>

Note: it is only for reference.
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Issues to implement ORM of Basle II

10 implementation issues

Processes, systems and capital allocations are easy
– the problems are the “people issues”:
1. Creating the framework – consensus on the right risk categorisation structure
2. Getting user involvement – the necessary amount from the right people
3. Deciding on how much data to collect – too little = poor statistics, too much = inaccurate data
4. Gaining regulatory approval – different interpretations/numerics in different jurisdictions
5. Building a risk culture – everyone knows what risk is
6. Achieving user acceptance – “why am I doing this?” “I have better things to do!”
7. Ensuring clean data – completing data correctly
8. Integrating feedback and statistics – to improve the system
9. Cleaning previous data – which may be incomplete
10. Updating the system – changing processes, risk categories (framework) and upgrading systems