OPERATIONAL RISK MANAGEMENT: PRACTICAL IMPLICATIONS FOR THE SOUTH AFRICAN INSURANCE INDUSTRY

Marilyn Martin & Mark Hayes
Agenda

- Aims
- Operational Risks in the Context of the South African Insurance Industry
- Operational Risk Management Principles
- Operational Loss Data as a Potential Solution
- Conclusion
- Questions
Definition

Operational Risk...

“the risk of loss resulting from inadequate or failed internal processes, people and systems, or from external events. This definition includes legal risk, but excludes strategic and reputational risk.”

(BCBS, 2001)
Aim of the Presentation

• To investigate operational risks within the context of the South African insurance industry

• To examine the general application of operational risk management principles

• To investigate the use of operational loss data as a potential solution
Aim of the Presentation

- **Context**
  - significance of operational risks
  - operational risks and Solvency Assessment and Management (SAM) framework

- **Operational risk management principles**
  - Operational risk management framework

- **Operational loss data**
  - internal databases
  - external databases
SA Industry Survey Relevance

- **Scope:** all South African registered insurers and reinsurers
- **Response:** 29 industry participants (±70% market GWP)

### Approximate gross annual premium

- **Less than R500 million**
- **R500 million - R1 billion**
- **R1 - 10 billion**
- **R10 - 10 billion**
- **R50 billion+**

### Respondents’ role

- **Senior Actuary**
- **CFO**
- **CRO**
- **Junior Actuary**
- **Other**

### Proportion of respondents

- **0%**
- **10%**
- **20%**
- **30%**
- **40%**
Operational Risks in the Context of the South African Insurance Industry
Operational Risks in the Insurance Industry

- Operational risks are *difficult* to identify, quantify, and manage.
- Insurers lag banks in the management of operational risks.
- Operational risks may *differ* between banks and insurers.

**Banking**
- Higher frequency, lower severity risks
- Transactional nature of retail banking

**Insurance**
- Lower frequency, higher severity risks
- Strategic nature of insurance
- Strategic risks threaten the insurer as a going concern
Operational Losses in the South African Insurance Industry

Operational losses as a percentage of net profit (by gross annual premium)

<table>
<thead>
<tr>
<th>Proportion of respondents</th>
<th>&lt;0.05%</th>
<th>0.05% - 0.5%</th>
<th>0.5% - 1%</th>
<th>1% - 5%</th>
<th>5% - 10%</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;R1 bn</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R1 - 10 bn</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R10 bn+</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Key operational risk concerns

- Other (please specify)
- Inability to manage going...
- Increase in public scrutiny
- Increase of legal risk
- Inability to retain clients
- Increase in fraud activities
- Increases in errors from...
- Inability to retain key staff
- Increase in reputational risk
- Increases in regulation
Operational Risk under SAM

- driver of developments in operational risk management

**Pillar I: SCR**
- two alternatives for the calculation of the Solvency Capital Requirements (SCR)
  - standard formula
  - internal model

**Pillar II: ORSA**
- more important than Pillar I in the management of risks
- holistic assessment and pricing of all material, foreseeable risks
- risk-management framework
- economic capital model
  - modelling using parametric distributions
  - modelling using scenario testing
Operational Risk under SAM

Intended formula to be used for the SCR calculation (by gross annual premium)

- Standard Formula
  - Totally: \(< R1\) bn
  - To a fair degree: \(R1 - 10\) bn
  - To a lesser degree: \(\text{Unsure}\)
  - Not at all: \(R10\) bn+

- Internal Model
  - Totally: \(< R1\) bn
  - To a fair degree: \(R1 - 10\) bn
  - To a high degree: \(\text{Unsure}\)
  - Not at all: \(R10\) bn+

- Unsure
  - Totally: \(< R1\) bn
  - To a fair degree: \(R1 - 10\) bn
  - To a high degree: \(\text{Unsure}\)
  - Not at all: \(R10\) bn+

Extent of change in operational risk handling approach due to SAM (by gross annual premium)

- Totally
  - \(< R1\) bn
  - \(R1 - 10\) bn
  - \(R10\) bn+

- To a fair degree
  - \(< R1\) bn
  - \(R1 - 10\) bn
  - \(R10\) bn+

- To a high degree
  - \(< R1\) bn
  - \(R1 - 10\) bn
  - \(R10\) bn+

- Not at all
  - \(< R1\) bn
  - \(R1 - 10\) bn
  - \(R10\) bn+
Operational Risk Management Principles
Operational Risk Management Framework

- General Economic and Commercial Environment
- Risk Identification
- Risk Policy
- Risk Assessment
- Risk Monitoring
- Risk Financing
- Risk Management
- Professionalism

2013 Convention 31 Oct & 1 Nov
Operational Risk Framework: Risk Policy

- **high-level** strategy to achieve company objectives
- should set out
  - **principles** for managing risk
  - **definition** and taxonomy for operational risk
  - organisational **structure**
  - roles and **responsibilities**
- **risk appetite** - amount of risk accepted to pursue strategic objectives
  - **quantifiable** and measurable
  - tie back to **economic capital** in the Own Risk and Solvency Assessment (ORSA)
Operational Risk Framework: Risk Identification

- Risk classification system
  - Common language within the organisation
  - Results in "boxes" to organise data
  - Classification system used by Operational Risk Consortium (ORIC)
  - Justification for the classification system required in the Own Risk and Solvency Assessment (ORSA)

- Key Risk Indicators (KRIs)
  - Quantitative measures representing operational risk performance
  - Embedded in the scenario approach

- Scenario workshops are a key identification tool
Operational Risk Framework: Risk Identification

Information collected as part of the operational risk assessment

- Linkages to other risks
- Other (please specify)
- Risk appetite limit
- KRI
- Reputational effects
- Risk ranking
- Frequency (#)
- Impact (R)
- Control description
- Risk owner
- Risk description

How interrelations between operational risks are captured (by gross annual premium)

- Not recorded
- Quantitatively
- Descriptively

Proportion of respondents

2013 Convention 31 Oct & 1 Nov
Operational Risk Framework: Risk Assessment

• ultimate goal
  • predict potential losses
  • so that actions can be taken

• Loss Distribution Approach (LDA)
  • parametric estimations of individual and aggregate losses

• scenario approach
  • risks calibrated by qualitative measures

• two approaches should be complimentary

• scenario approach may inform key points on the parametric distribution
Operational Risk Framework: Risk Assessment

**Current methods used for operational risk evaluation**

- Don't know
- Stochastic Modelling
- Modified SAM Standard formula
- Other
- Factor based on volume measures
- Firm Developed Model
- SAM Standard Formula
- Scenario Analysis/ Stress Testing

**Proportion of respondents**

** Appropriateness of data-based modelling of operational risk**

- Unsure
- Completely appropriate
- Highly appropriate
- Fairly appropriate
- Slightly appropriate
- Not at all

**Proportion of respondents**
Operational Risk Framework: Risk Assessment

- difficulties
  - LDA requires **historic** data for calibration
  - scenario approach does not **directly** require historical data, but what informs the scenarios?
- record losses in a well maintained **internal** loss database
  - capture **near-miss** events
  - record **interdependencies/correlations** between loss events and between their indicators
  - **cause-and-consequence** recording approach
- supplementation through **external** databases
Operational Risk Framework: Risk Assessment

**Degree to which operational risk data is recorded**

- Unsure
- Totally
- To a high degree
- To a fair degree
- To a lesser degree
- Not at all

**Proportion of respondents**

**Recording of near-miss events**

- Not recorded
- Recorded

**Proportion of respondents**

R10 bn+  R1 - 10 bn  < R1 bn

2013 Convention  31 Oct & 1 Nov
Operational Risk Framework: Risk Management

- **purpose**: minimise the impact of losses to allow for a greater focus on the revenue generating activities

- **actions**
  - implement risk **controls**
  - put in place **mitigation** strategies
  - record in a **risk register**

- essential that there is a **link** between operational risk modelling and management
  - currently a **disconnect** between the two sides – goal for the future
Operational Risk Framework: Risk Management

Importance of sound operational risk management practices

- Absolutely important
- Highly important
- Fairly important
- Slightly important
- Not at all

Proportion of respondents

Effectiveness of operational risk management practices

- Unsure
- Totally effective
- Highly effective
- Fairly effective
- Slightly effective
- Not at all

Proportion of respondents

2013 Convention 31 Oct & 1 Nov
Operational Risk Framework: Risk Management

- ultimate **responsibility** for operational risk management:
  - board of directors

- **organisation** of risk function
  - centralised
  - embedded approach
  - both recommended

---

**Ownership of responsible for operational risk management**

- Board of Directors
- CRO
- Role Shared
- Other

**Organisation of operational risk function**

- Centralised
- Embedded in the lines of business

---

2013 Convention 31 Oct & 1 Nov
Operational Risk Framework: Risk Financing

- **financial implications** of all aspects of the framework should be considered when determining the optimum strategy

- "**risk-reward trade-off"** approach

- financing under **SAM**: holding of regulatory capital
  - is holding capital for operational risk **appropriate** at all?
  - cost of that capital better used for improving the **effectiveness** of controls?
Operational Risk Framework: Risk Monitoring

- ongoing **process**
  - by embedded personnel in business lines
  - overseen by the central risk manager
- iterative **feedback loop** – assess earlier stages in the process
- operational risk management is **not a static** concept
Operational Loss Data as a Solution
Operational Loss Data
Uses of Operational Loss Data

• **Risk Identification**
  • historical loss data provides a **reference**
  • **alert** firms to risks otherwise not considered
  • ensures **completeness** in the classification system

• **Risk Assessment**
  • **effective** modelling requires data
Uses of Operational Loss Data

• **Risk Management**
  - decision-making **tool** for risk managers
    - identifies which risks require the most attention
    - indicates which risk-reducing processes are worth investing in
  - **learning** opportunities for companies
  - capturing the **causality** of the event provides the greatest insights

• **Risk Monitoring**
  - monitor operational risk experiences **objectively** over time
  - firm-specific losses can be **isolated** from those systematic to the industry
Limitations of Operational Loss Data

- not sufficient on its own
- past events may **not be applicable** for future experience
  - risk management practices improved
  - mitigations and controls put in place
  - relevance of data diminishes over time
- **insufficient** low-frequency/high-severity events present to inform modelling
- **black swan** events impossible to predict from data alone
Sources of Operational Loss Data: Internal Databases

**Limitations**
- costs
- suffer from bias
- not all risk events captured

**Benefits**
- indication of future experience
- assessment of internal controls
- enhances awareness of operational losses
- applicable data

- internal loss data more appropriate for qualitative analysis
- certain practices increase the usefulness of internal loss data
Sources of Operational Loss Data: External Databases

- sources of external loss data
  - publicly-available losses
  - commercial databases using proprietary loss data
  - consortium-based loss data
- the degree of confidence one may place on each source differs
- nature of events differs in consortiums
  - consortium data more consistent
  - may include legally sensitive events, not available publicly
  - the threshold for recording losses lower
Sources of Operational Loss Data: External Databases

**Limitations**
- recording threshold too high
- data from other firms may be too different
- may represent culture of largest member

**Benefits**
- incentive to enhance processes
- provides applicable benchmark
- greater info at extremes
- greater volume of data

---

2013 Convention
31 Oct & 1 Nov
Sources of Operational Loss Data: Combining Different Data Sources

- assists with both **quantitative** and **qualitative** analysis of risks
- careful **scaling** of data needed to avoid bias / unrealistic results
- internal and external loss data should be combined with expert judgement to ensure the most **complete** view
Use of an Operational Risk Consortium in the SA Insurance Industry: ORIC

- Operational Risk Consortium (ORIC)
  - founded in 2004 by the Association of British Insurers (ABI) (UK)
  - 31 members
  - losses above £10 000 recorded

- function
  - collect, standardise and report operational loss and near miss data
  - provide risk management support to member firms
  - work with FSA to assist in regulation of operational risk management
Use of an Operational Risk Consortium in the SA Insurance Industry

- South African insurers would be permitted to join ORIC

<table>
<thead>
<tr>
<th>Operational Risk Consortium (ORIC)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Benefits</strong></td>
</tr>
<tr>
<td>• <strong>enhanced</strong> data from UK members</td>
</tr>
<tr>
<td>• modelling <strong>support</strong></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
Use of an Operational Risk Consortium in the SA Insurance Industry

- South Africa’s own operational loss consortium?

**Risk Event Database (RED)**

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Challenges</th>
</tr>
</thead>
<tbody>
<tr>
<td>• good-quality, <strong>relevant</strong>, unbiased operational loss data</td>
<td>• costs of joining / subscribing</td>
</tr>
<tr>
<td>• identification of <strong>trends</strong> in risks</td>
<td>• <strong>relevance</strong> of shared data amongst insurers</td>
</tr>
<tr>
<td>• provision of a <strong>benchmark</strong></td>
<td>• <strong>time</strong> needed before the database is of a meaningful size</td>
</tr>
<tr>
<td>• improvements in <strong>exposure</strong> as a result of enhanced internal operational risk processes</td>
<td>• current operational loss data recording <strong>standards</strong> inadequate</td>
</tr>
<tr>
<td>• provision of <strong>key inputs</strong> for scenario discussions</td>
<td>• <strong>ownership</strong> and management of the database</td>
</tr>
</tbody>
</table>
Use of an Operational Risk Consortium in the SA Insurance Industry: RED

Willingness to be involved in an operational risk consortium (by gross annual premium)

<table>
<thead>
<tr>
<th>Proportion of respondents</th>
<th>R10 bn+</th>
<th>R1 - 10 bn</th>
<th>&lt;R1 bn</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Willingness to join an operational risk consortium (subscriber vs. contributor)

- As a subscriber: 86%
- As a contributor: 14%

2013 Convention  31 Oct & 1 Nov
Use of an Operational Risk Consortium in the SA Insurance Industry: RED

- **feasibility**
  - 52% of respondents believe it feasible
  - should be considered bearing in mind the consequences of failing to implement proper initiatives now
  - willingness of industry to join promising

- **practicalities**
  - choice of administrator
  - regulatory position
  - interim preparations
  - costs
Conclusion

- operational risks are very **significant** to South African insurers
  - realise its importance and have begun to develop frameworks
  - wide range of maturities in processes between insurers

- **regulation** is the main driver of operational risk developments
  - but industry not happy with the approaches for the capital calculations in respect of operational risk

- Operational loss data **essential**
  - current use immature

- more research required on the **feasibility** of a South African operational risk consortium
Questions