Institute and Faculty of Actuaries

Sessional Research Event: Operational Risk Working Party

6 March, Royal College of Physicians, Edinburgh.

31 January 2017

Good practice in setting inputs to Operational Risk models

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Operational Risk – an overview

- Diverse risk category – covering everything from cyber-crime to misselling, and from IT failure to discrimination claims.
- Similarities with general insurance risks:
  - Potential for catastrophic losses e.g. LBG's £17bn PPI loss.
  - Legacy (/IBNR) exposure e.g. losses in 2000s from mortgage endowments mis-sold in the 1980s.
  - RBNS exposure – LBG originally set aside £3.2bn for PPI misselling in 2011.

Operational Risk – an overview

- Operational risk affects all firms...
- ...though firms can mitigate exposure with controls.
- Operational risk is constantly evolving driven by:
  - Changing business models e.g. Wrap; P2P lending;
  - Technological change e.g. cyber crime;
  - Legal changes e.g. ECJ rulings on overtime and holiday pay;
- ...faster than general insurance market can evolve to offer solutions.

Operational Risk Framework

- Operational risk models are useless without a robust underlying operational risk framework.
- Modelling should ideally feed back into operational risk management.
- A well defined operational risk taxonomy is a key framework requirement otherwise:
  - Losses mis-categorised compromising model data;
  - Scenario analysis covers the same risk twice under different categories...
  - ...or worse the risk is missed.

Internal Loss Data (ILD)

- While a natural starting point for operational risk modelling, this is beset by many problems:
  - ENID
  - Retrospective view – relevance ?
- Other challenges
  - Loss impact relevant for capital modelling ?
  - Exposures to 3rd parties such as fund managers and outsourcers.
- BCBS guidance should be considered by non-banks.

External Loss Data (ELD)

- ORX, ORIC, Algo First
- Issues:
  - ENID still a problem ?
  - Mapping to own risk categories
  - Scaling to reflect firm's size and exposure
  - Relevance: as for internal, but with added complication of different businesses and control frameworks
- External data could still help with
  - scenario analysis;
  - validation of model results; and
  - BAU risk management and learning from others mistakes.

Scenario Analysis

- Key component: prospective view; may capture low frequency high impact exposures missing from data.
- Issues:
  - Intrinsically subjective
  - Bias ? – need for an open, frank discussion of exposures
- Requirements:
  - Preparation: SMEs involved ? Background material ?
  - Follow-up, particularly around loss estimates
  - Independent review and challenge
  - Documentation
  - Executive ownership and sign-off

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Correlation Assumptions

- Key determinant of operational risk capital
- Empirical correlations will suffer from sparse data
- Expert judgement key but setting correlations for say 20 Basel II risk types (190 assumptions) impractical
- Could consider:
  - Grouping of risks e.g.Basel Level 1
  - Exposure to causal factors e.g.high staff turnover; flu pandemics
- Independent review and challenge and executive sign-off essential to ensure EJs reasonable

Other Inputs

- Risk Mitigation:
  - Insurance: policy terms and extent and term of cover
  - Outsourcing – legal agreements and the ability to charge back losses in practice
- Legal Entity allocation if risk assessed at a higher level ?
  - Scope to charge back losses ? e.g.employee relations losses may be exempt from chargeback ? α SLA
  - With-Profit Funds: scope to charge back losses consistent with TCF and PPFM ? With Profit Actuary &/or Committee's view ?

Conclusion

- Key findings:
  - Literature review: loss data needs to be supplemented by a prospective view, particularly scenario analysis
  - Some good practice already out there e.g. BCBS 196
  - Prerequisite: sound operational risk management framework including detailed taxonomy
  - ILD: ENID issues; watch loss impacts and 3rd party losses
  - ELD: issues with ENID, relevance and scaling
  - Scenarios: key elements => preparation; follow-up; review and challenge; executive ownership and sign-off
  - Correlations: empirical flawed; need for EJ
  - Extensive research needed to support other assumptions such as risk mitigation and legal entity allocation

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