

Internal Model Industry Forum: Aligning Operational Risk and Insurance

April 2018

Internal
Model
Industry
Forum



Supported by:



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1. Foreword



Previously the Internal Model Industry Forum issued guidance on the practice of modelling operational risk.

Previously, the Internal Model Industry Forum issued guidance on the practice of modelling operational risk. This paper seeks to take this discussion forward by looking at how insurers can leverage their operational risk management activities such as modelling to build closer and more explicit links with insurance purchase decisions. In doing so, we support one of the objectives of the IMIF, which is to support and increase the use of internal models within the risk management framework.

To date the operational risk management tasks of modelling and insurance purchasing have often been seen as separate activities. Nevertheless, there are considerable potential benefits for insurance companies (and, indeed, all firms) that closely align insurance purchase decisions with the management and modelling of their operational risk. Insurance purchase should be closely aligned with exposure and the use of scenarios is a key activity supporting this.

The aim of this paper is to provide some clarity on current industry practices, and to provide views on good market practices. In doing so, the paper recognises risk management benefits from aligning risk modelling and insurance:

- the understanding we gain from our operational risk modelling can inform our insurance purchasing; and
- the benefit of insurance purchases can be better reflected in our capital modelling, potentially providing a capital benefit

I would like to thank the members of our project team for their extensive work researching and developing the thinking in this booklet. Our IMIF Steering Committee provided overall project guidance and peer review.

We are grateful to representatives from the Prudential Regulation Authority (PRA) and the Central Bank of Ireland (CBI), who have enabled us to maintain a continuous and positive dialogue between industry and the regulators on our work.

I would also like to thank Marsh for their sponsorship of this paper and ORIC International for providing us with their insight and access to their membership. As a not-for-profit organisation IRM is reliant on enlightened industry support to help us publish documents like this. It is this kind of support that helps us maximise our investment in the development and delivery of world class risk management education and professional development.

**Philip Whittingham BA (Hons) MBA ACII CFIRM
Chair, IMIF
Head of Model Validation and Risk Governance
(including Operational Risk), XL Catlin.**

Foreword from the ORIC International Chief Executive



As part of the Internal Model Industry Forum, ORIC International continues to work with key experts from our membership to advance current market practices in operational risk frameworks and modelling.

The foundation of any good operational risk framework is to seek management actions to manage and mitigate the key operational risks the firm may face. Insurance purchasing should be a key consideration in this respect.

Our study shows that:

Industry practices regarding insurance purchasing and the incorporation of insurance into operational risk framework and capital modelling continue to evolve. However, better awareness amongst Senior managers and Executive Boards of the potential benefits of alignment and operational risk transfer options available is still required.

Operational risk tools such as internal and external loss event data, risk control self-assessments, operational risk scenarios and, ultimately the internal model go hand with loss mitigation. There is a real opportunity for firms to use insurance to manage their risk profile and maximise capital efficiency.

This guidance highlights areas where further enhancements can be made by firms and insurance providers. Our thanks to the IMIF project team and our members for sharing data, knowledge and insights to support the creation of this guidance.

We trust that you'll find this work useful for understanding current insurer practices and identifying future areas for consideration, many of which will have broader applicability to other industry sectors.

**Caroline Coombe CFIRM FIOR
ORIC International Chief Executive**

2. Introduction

Operational risk and insurance purchase

Operational risk includes a wide range of potential events, such as mis-selling, mis-pricing, business continuity, and cyber, as well as physical and man-made disasters. Research has shown that operational loss events have a significant impact on the market value of insurers.¹ The insurance industry has invested heavily in operational risk management and is required under Solvency II (or equivalent regulations) to have a robust operational risk management framework and to hold capital with respect to operational risk. In many instances, firms are enhancing their internal capital models to support the assessment and management of their operational risk capital requirement.

Insurance is a well-established means to transfer operational risks to third parties. However, while the operational risks faced by an insurer and its insurance purchase decisions should be closely related, historically they have been seen as largely separate disciplines and there is a range of practices in place within the industry. Frequently, insurance purchasing decisions do not reflect the risks identified through the operational risk management framework and associated model. Yet information from the operational risk management framework (for example risk appetite and risk scenarios) should be directly relevant in determining how much risk to transfer to insurers and what insurance coverage is required.

Equally, while it is true that many insurers buy a range of insurance coverages, the benefits and explicit understanding of these within operational risk capital models varies considerably.

Regulatory context

Under Pillar 1 of Solvency II, operational risk is one of the risks that needs to be covered by the firm's Solvency Capital Requirement (SCR). The operational risk component can be calculated using the standard formula² or an internal model (reflecting the nature, scale and complexity of the risk, and meeting technical standards). Insurance can be used to offset the operational risk contribution to the Solvency Capital Requirement, provided that credit risk and other risks arising from the use of such risk mitigation techniques are properly reflected in the capital calculations undertaken.³

There is a long precedent of using insurance to offset capital requirements for banks under Basel II (either under Pillar 1 for Advanced Measurement Approach (AMA) institutions or under Pillar 2). Basel requirements limit the reduction in capital requirements from the recognition of insurance and other risk transfer mechanisms to 20% for AMA firms under Pillar 1 and set out specific criteria for the firm's insurance framework and methodology for recognising insurance.⁴

Approach and structure of report

We conducted a survey of 25 insurers during Q4 2017, supplemented by some additional interviews with both risk management personnel at insurers and insurance underwriters, with experience of writing bespoke operational risk structures (i.e. insurance coverages specifically aligned to a company's operational risks).

The remainder of this report is structured as follows:

- **Section three:** Benefits of aligning operational risk management and insurance purchasing.
- **Section four:** State of the market.
- **Section five:** Considerations on the alignment of operational risk and insurance.
- **Section six:** Operational risk transfer options.
- **Section seven:** Conclusions.

1. See, for example, Cummins, J & M. Lewis, Christopher & Wei, Ran. (2006). The Market Value Impact of Operational Loss Events for US Banks and Insurers. Journal of Banking & Finance.

2. Formula based on either earned premiums or technical provisions (to a maximum of 30% of basic solvency capital requirements, excluding operational risk).

3. Article 101(5) of Directive 2009/138/EC (Solvency II).

4. Note that reforms to the Basel framework have been published in December 2017, which remove modelled approaches surplus space from Pillar 1. Insurance recoveries will still be factored into the new standardised approach and can be considered under Pillar 2.

3. Benefits of aligning operational risk management and insurance purchasing

There are a wide range of potential benefits from closely aligning the operational risk framework and modelling with insurance purchasing. These include:

- **Determining the optimal risk transfer strategy and insurance programme:**
The firm's operational risk management framework provides the firm's best view of its operational risk profile. Using this information to inform decisions on whether and how much insurance to purchase ensures that the insurance programme is fully aligned to the risk profile of the firm and its associated risk appetite as well as providing a clear rationale for decisions taken (including cost-benefit assessments).
- **Demonstrating the use of the risk management framework and models:**
The "use test" is one of the key tests for any approved internal model. By demonstrating how the model and the processes within it are used to inform purchase decisions, insurers are better placed to evidence meeting this test.
- **Recognising the risk mitigating effects of insurance for capital purposes:**
Insurance can be recognised when assessing capital requirements, potentially reducing overall capital requirements.
- **Providing the relevant information to improve assessment of operational risk:**
Insurance providers have detailed and relevant experience of loss events that have occurred within the market that might not be readily accessible within the firm's own internal or external loss data sets provided by organisations such as ORIC. By discussing the coverage option, insurers can gain a wider understanding of the risks and the losses taking place.
- **Opening up bespoke insurance options:** By considering the alignment of operational risk and insurance decisions, firms can develop more tailored solutions for their insurance needs and which are aligned to their risk profile and associated appetite.

All of the above have the wider benefit of demonstrating quality of risk management processes to internal and external stakeholders, including shareholders, debtholders and credit rating agencies.

4. State of the market

This section provides an overview of the state of the market relating to the alignment of operational risk and insurance, based on the results of the survey and interviews. Results are presented thematically and include the following key themes:

- **Alignment of operational risk framework and insurance purchasing:** the operational risk framework is used to inform insurance purchasing, however this differs across firms, which presents an opportunity for further enhancement.
- **Risks covered by insurance programmes:** typically firms insure a wide variety of their operational risks through traditional policy types, especially damage to physical assets, business disruption, Directors' and Officers' liability and system failure. The purchase of bespoke insurance for operational risks is less common, although a growing number of firms are considering this option. Nevertheless, a sizeable proportion of firms (approximately 40%) believe the insurance market can go further to meet their specific needs thus increasing the opportunity for alignment between the operational risk models and insurance purchasing.
- **Insurance and estimation of capital requirements for operational risk:** the majority of firms (approximately 70%) use insurance programs as a means to mitigate operational risk under Solvency II. Nevertheless, out of the firms that utilise insurance, there is a range of practices in how it is used. There is also a belief by some participants that regulatory expectations could be clarified on this topic.

Alignment of the operational risk framework and insurance purchasing

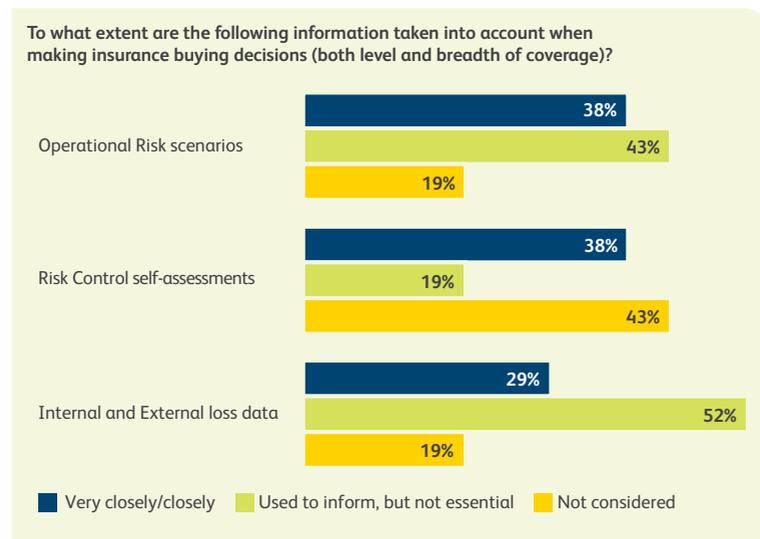
The key elements of operational risk frameworks, such as internal and external loss data, risk control self-assessments, operational risk scenarios and, ultimately the internal model, can provide important inputs for establishing a firm's insurance strategy and programme.

Historically there has been a disconnect between operational risk management frameworks and insurance purchasing. One of the reasons for this has been that responsibility for the model and responsibility for insurance purchase sit in different parts of the organisation.

Our survey shows that there is a wide range of practice regarding responsibilities for insurance purchasing. The risk function is most often accountable (33%), followed by finance (29%), procurement (14%) and legal (10%).

It is important that those making decisions around the insurance programmes being purchased are closely aligned to the Operational Risk Management team and are able to leverage insights and inputs from the activities undertaken by them. This should be a two-way process with the impact of various options within insurance programmes being modelled before a final purchasing decision is made.

Exhibit 1: Operational risk information taken into account when making insurance buying decisions (survey results)



In fact, our survey results (Exhibit 1) show that most institutions see themselves to be using closely or very closely operational risk information when making insurance buying decisions. This is especially true of operational risk scenarios, although a sizeable proportion of firms (43%) do not consider risk control self-assessments.

Firms that use operational risk frameworks to inform insurance purchasing, as reflected in the survey results, include both internal model and standard formula firms.

As many participants of this initiative have stressed, the alignment of insurance, risk and finance functions would maximise the role that insurance can play to support the business appropriately.

Risks covered by the insurance programmes

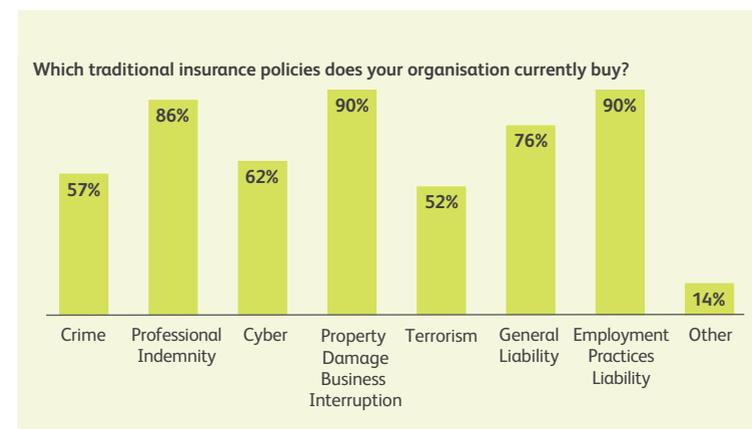
Insurance represents an effective method to mitigate firms' exposure to operational risk and to offset the operational risk contribution for the calculation of minimum capital requirements. The standard set of insurance products which are purchased by firms (see Exhibit 2) can mitigate to some degree all classes of operational risks that the institution faces (see Exhibit 3).

There is a range of views around the strategic benefits of putting insurance programmes into place.

Beyond the fact that insurance has traditionally been purchased by the firm, the main objectives of firms for buying insurance are the following:

- Transfer exposure to lower frequency higher impact risks (52%).
- Reduce volatility in earnings (44%).
- Part of an optimised return decision (including consideration of insurance as an alternative form of capital (24%).

Exhibit 2: Traditional insurance policies purchased by firms (survey results)



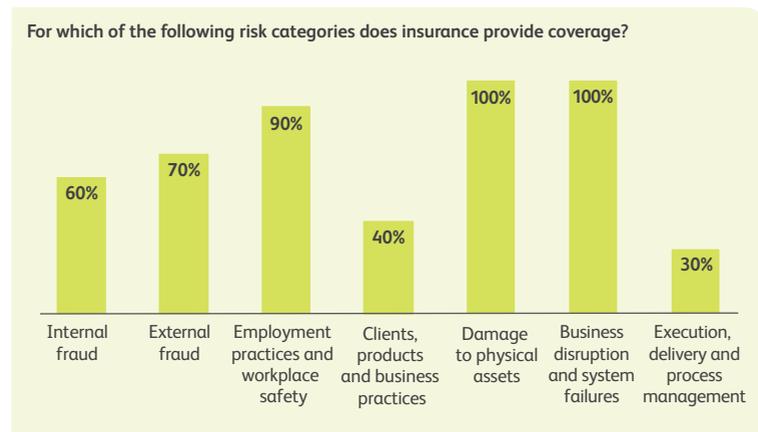
The insurance industry has its own distinct risk profile and generates ever-present operational risk exposures, which must be managed to enable insurers to remain financially stable and competitive.

There is a variety of types and categories of insurance that can be purchased by an insurer, helping to mitigate the impact of losses on the firm.

Although traditional insurance policies are not fully aligned with the standard categorisation of operational risk event types used within internal models (which are often aligned to Basel risk categories), these policies do help mitigate firms' exposure to many types of operational risk.

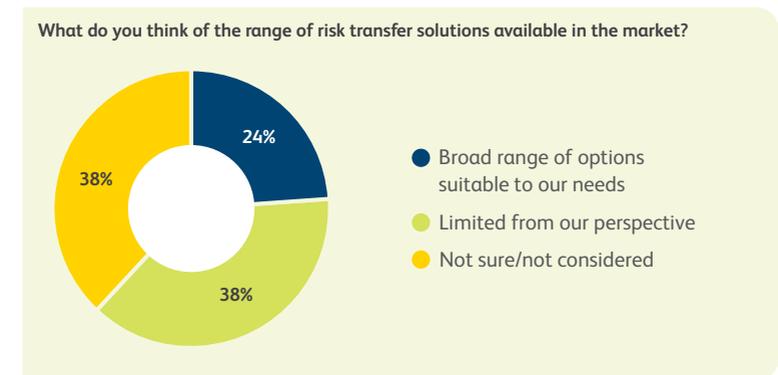
As shown in Exhibit 3, all survey respondents do have insurance programmes in place to transfer risks related to damage to physical assets, business disruption and systems failures to the insurance market and a vast majority transfer risks related to employment practices and workplace safety. Fewer firms report coverage for internal and external fraud, clients, products and business practices, execution, delivery and process management. While for certain classes of insurance (e.g. professional indemnity) do provide coverage of such risks, there are generally limitations on what is legally insurable (e.g. regulatory fines).

Exhibit 3: Level of coverage provided by insurance to operational risk event types (survey results)



From the perspective of an insurance firm, there is likely a limit to what the traditional insurance market can do to mitigate its major risks. This is due to potential mismatches in coverage from traditional policies to the firm's specific risk profile as well as the limited insurability of certain impacts (such as regulatory fines).

Exhibit 4: Views of survey respondents on the range of risk transfer solutions available in the insurance market



A significant proportion of those surveyed believe that the range of risk transfer solutions available in the market is limited from their perspective (38% with another 38% unsure).

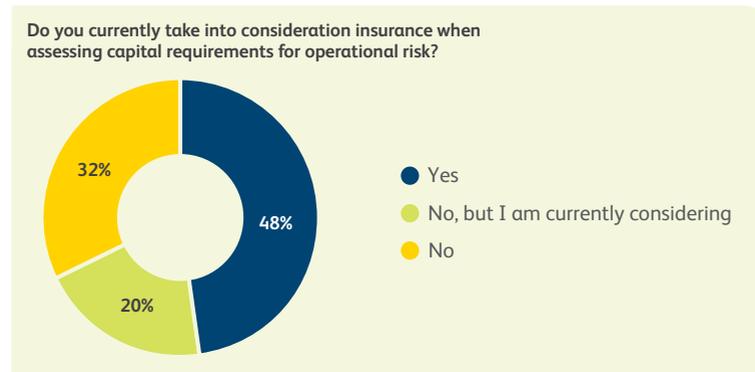
While a few insurers are currently buying bespoke insurance around the whole of their operational risk exposure, a sizeable proportion of respondents are exploring the viability of this option (approximately 30%).

Insurance and estimation of the capital requirements for operational risk

Almost 70% of firms surveyed are currently considering insurance within their estimation of the capital requirement for operational risk or are planning to do so (see Exhibit 5).

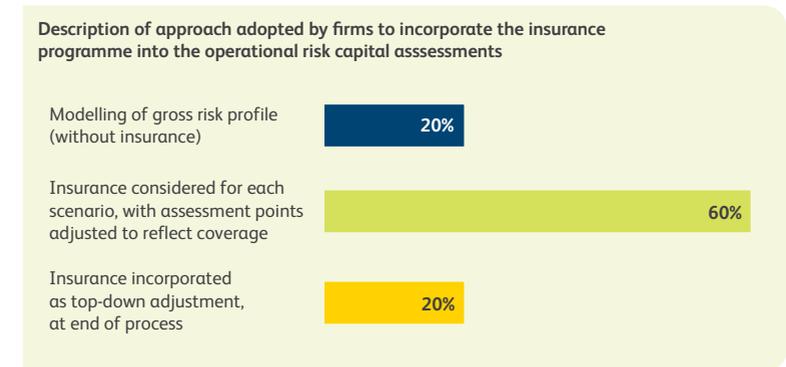
Among these firms there are a range of practices: some consider the potential impact of all insurance policies against the entirety of operational risk scenarios developed, while others focus on specific insurance policies against a few scenarios.

Exhibit 5: Consideration of insurance for the estimation of operational risk capital requirements (survey results)



The survey revealed, as shown in Exhibit 6, that 20% of insurers model the gross risk profile for operational risk without taking into consideration the benefit of any insurance that they have in place around certain risks. However, 60% do consider the benefits of insurance for each operational risk scenario modelled, adjusting the assessment points to reflect their insurance programmes.

Exhibit 6: Approach adopted by firms to incorporate insurance in the assessment of capital requirement for operational risk (survey results)



For those insurers that are not purchasing insurance specifically to cover operational risk (as a class of business) there are a variety of reasons. Some firms have not developed a quantification approach, while others believe that it would be too complicated to consider insurance as part of their assessments.

Regardless of the approach adopted by the firm, the majority of survey respondents believe that regulatory expectations and guidelines with respect to the incorporation of insurance into the capital assessments could be clarified.

5. Considerations on the alignment of operational risk and insurance

This section provides considerations on the alignment of operational risk and insurance, focussing first on the broader operational risk and insurance frameworks, before considering risk assessment and modelling.

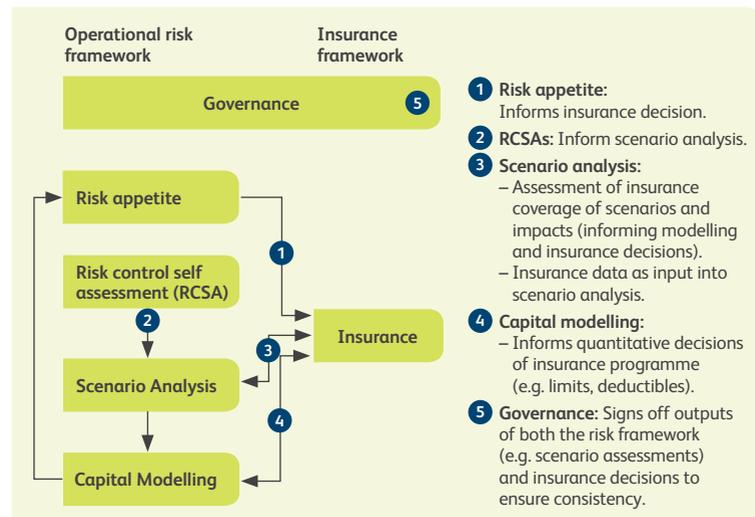
Alignment of operational risk and insurance frameworks

As outlined earlier, information in the operational risk management framework is relevant for determining insurance purchasing decisions.

How these components are best linked depends on the organisational structure of the firm as well as associated processes such as when insurance programmes are negotiated or scenarios are run.

Nevertheless, it is good practice for there to be explicit consideration of how the specific elements of the operational risk management framework inform insurance purchasing and vice versa. This includes governance of both frameworks, risk appetite, risk identification and assessment processes, and risk modelling. An illustrative example of potential framework links is set out in Exhibit 7.

Exhibit 7: Illustration of aligned operational risk and insurance frameworks



Questions firms should ask

- How do the various elements of my operational risk framework inform insurance decisions?
- To what extent do we use information from our insurance programmes to inform operational risk management assessments?
- Are outputs and decisions from my operational risk and insurance frameworks consistent? Are there mechanisms in place (e.g. aligned processes, governance) to ensure that they remain consistent?
- To what extent does our firm have a common view of the operational risks that we face and the insurance we purchase?
- How consistent is our insurance programme with the risk profile defined by the operational risk framework?
- Are we able to quantify the impact of our insurance programme on our risk profile? Do we take this into account when assessing our capital requirements and factor in our scenario work?

Incorporation of insurance into operational risk capital assessments or models

The determination of how insurance should be incorporated into operational risk capital assessment and/or models is dependent on the purpose of the exercise, and the regulatory approach being employed.

For those firms utilising an internal modelled approach, there are a wide range of potential variants of models depending on factors such as internal data availability, the nature and scale of the business, and legal entity/business structure. For example, operational risk models can range from loss data approaches (models which are calibrated using internal and external historic loss data), to scenario-based approaches (models which are calibrated using scenario analysis outputs), and to hybrid approaches (models which combine the two previous approaches). All of these approaches incorporate different decision points around how to parameterise frequency and severity distributions based on the inputs).

The approach for incorporating insurance into an operational risk capital assessment or model needs to be consistent with the objectives, standards, and constraints (such as the availability of data) of the firm. The approach should also:

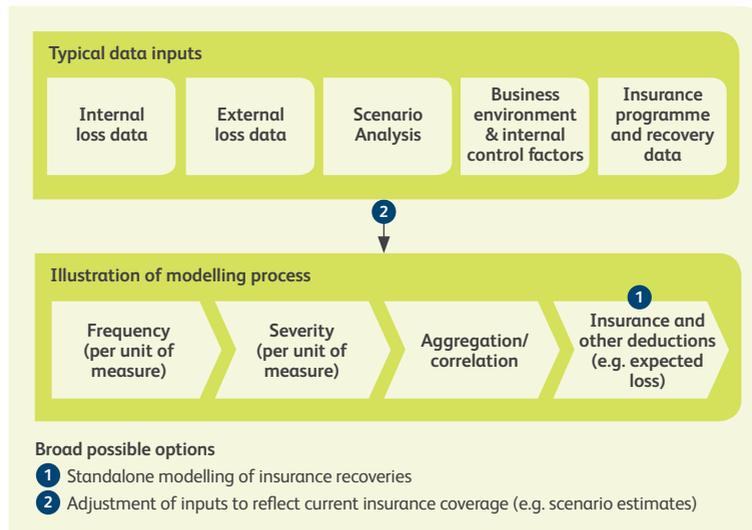
- Meet the regulatory requirements in the light of the purpose of the assessment/model (that is, the internal model for Pillar 1).
- Meet the internal model development and governance standards.

- Include expert assessments when these are robust, repeatable and unbiased.
- Capture insurance response that accurately reflects the policy coverage in place within the timeframe of the estimation (including the amount of coverage and the breadth of coverage) and
- Reflect potential limitations to insurance response (for example, due to mismatches in coverage, delays in payment, or non-renewal of policy where outstanding term is less than one year).
- Be able to assess capital requirements gross and net of insurance.

For firms using a modelled approach, it needs to be determined how insurance is incorporated into the capital model. As set out in Exhibit 8, there are broadly two types of potential options:

1. Standalone modelling of insurance recoveries.
2. Adjustment of inputs to reflect current insurance coverage (such as scenario inputs).

Exhibit 8: Illustration of modelling process and typical data inputs (differs by institution)



The choice of approach should satisfy the set of principles set out above. Note that modelling operational risk using loss data net of historic insurance recoveries would not satisfy the principles as this would not reflect the current insurance coverage in place (it has, therefore, not been presented above as an option). In addition, the challenge with adjusting inputs to reflect current insurance coverage is how to ensure that aggregate policy limits are fairly reflected and to reflect potential limitations of policy coverage.

We would therefore consider best practice to be standalone modelling of the insurance response. This involves modelling insurance response per modelled loss within a unit of measure, taking into account insurance payments already made within that modelled year (including across other units of measure where limits or deductibles/excesses are shared). The modelling should consider the probability that a policy within the programme will respond (taking into account uncertainty in payment and mismatches in coverage) and apply appropriate haircuts or discounts to reflect topics such as:

- Credit rating of the insurance provider.
- Residual term of policy.
- Policy provided by a third party.
- Exclusions or limitations triggered by supervisory actions or liquidation.
- Time to recover losses.

We would highlight the importance of employing a structured and data-supported approach to assessing uncertainty in payment and mismatches in coverage, and other haircuts, reflecting the specific terms and exclusions within the policy relative to the risk profile of the institution.

6. Operational risk transfer options

Typical challenges of incorporating insurance through scenarios into a model

- Carrying over conclusions on coverage based on analysis of a specific set of circumstances: This depends on the specific approach to scenario analysis employed by the organisation but generally scenarios define a specific set of circumstances through which a loss materialises. If circumstances differ slightly (that is, in a very similar scenario), there may be differences in conclusions as to insurance responses (for example, due to a collusion clause). Consideration should be given to how conclusions from specific circumstances are carried over to the broader scope of the unit of measure in the model.
- Extrapolating conclusions on coverage to potential loss events further in the tail of the severity distribution: related to the point above, typically scenarios are assessed at a level of severity lower than that used to estimate capital requirements (e.g. 1 in 5 year or 1 in 20 year worst loss). The circumstances of losses at this level of severity may differ from those that are more severe. Consideration should be given to how conclusions from assessment of insurance response at the level of severity of the scenario are extrapolated into the tail of the severity distribution for that unit of measure.
- Ensuring the application of aggregate limits, especially where shared across scenarios/units of measure: As well as establishing that there would be coverage under the terms of the insurance policy, consideration needs to be given to limits and deductibles/excesses, including those shared across scenarios/units of modelling. In the case of adjusting scenario inputs directly, doing so in a realistic and reasonable way is more challenging.
- Application and estimation of other haircuts or discounts: As discussed in the text, a range of haircuts or discounts should be considered (for example to account for the potential default of the insurance provider). In the case of adjustment of scenario inputs, these factors need to be consistently taken into account on a scenario-by-scenario basis, rather than being estimated and captured centrally through a direct model of insurance response.

For these reasons, it is seen to be best practice to model risks gross of insurance recoveries and then model insurance recovery, thereby providing full transparency. As described in the following section, bespoke operational risk insurance policies are designed to align more closely to the operational risk definitions and categories of the organisation, addressing some of the coverage challenges highlighted in the above points.

Aligning the insurance covers a firm buys for the operational risks that it faces and reviewing the benefit of each insurance purchasing decision to the risk presented is important. No organisation wants to purchase insurance unnecessarily and find the programme does not cover the risks faced.

Both traditional and bespoke operational risk insurance can be used to transfer a firm's operational risk profile. The effectiveness of the transfer depends on the overlap of coverage of the policy and the risk profile of the firm.

Considering first traditional insurance options, a wide range of policies potentially provide coverage for the various operational risk exposures faced. An illustration of coverage provided by different policy types is set out in Exhibit 9.

Some insurers are also considering the purchase of bespoke operational risk transfer options, which are policies that are tailored to the risk profile and needs of the firm, and therefore more directly aligned to their operational risks. Typically the modelling approach used by a firm feeds more explicitly into the insurance coverage with fewer assumptions put in place between provider and purchaser leading to more certainty that claims will be paid when they occur. Bespoke operational risk policies also allow for a range of potential structures to meet the specific needs of the institution, including:

1. Per loss catastrophic layer insurance of major scenarios/units of measure: Bespoke coverage focused on major operational risks; typically with high attachment and detachment points on a per loss basis (with annual limit).
2. Annual aggregate operational risk insurance across all risks: Typically provides broad coverage of firm's risk exposure (to the extent legally insurable) with coverage provided for aggregate annual pool of losses (subject to terms of policy).

As well as providing a mechanism for effective risk transfer, the purchase of bespoke operational risk coverage acts as an external check on the quality of operational risk management at the firm (to the point where an external firm is willing to underwrite the risk), and is a demonstration that the firm has a joined up risk management and insurance transfer strategy.

7. Conclusion

Exhibit 9: Mapping of operational risk event types and potential coverage by standard insurance policies (illustrative)

Standard event type (ET) level	Standard event type level	Crime	Professional Indemnity	Directors and Officers	General Liability	Property Damage & BI	Terrorism	Cyber	Bespoke Operational Risk
ET1. Internal fraud	Unauthorised Activity, Theft and Fraud	■							■
ET2. External fraud	Theft and Fraud				■	■			■
	System Security				■	■	■	■	■
ET3. Employment Practices and Workplace Safety	Employee Relations, Safe Environment, Diversity & Discrimination								■
ET4. Clients, Products & Business Practices	Suitability, Disclosure & Fiduciary		■	■				■	■
	Improper Business or Market Practices, Product Flaws, Selection Sponsorship & Exposure, Advisory Activities		■	■					■
ET5. Damage to Physical Assets	Disaster and other events				■	■	■		■
ET6. Business disruption and system failures	Systems		■		■	■		■	■
ET7. Execution, Delivery & Process Management	Transaction C. Executive & Mainten., Monitor & Report, Customer Intake and Doc., Customer Account Man., Trade C. Vendor & Supplier		■	■					■

Some firms are clearly recognising the benefits of aligning operational risk and insurance. These include determining an optimal risk transfer strategy, demonstrating “use” of risk management processes and models, and taking insurance into account when estimating capital requirements for operational risk. We believe that more firms could benefit from these developments, particularly as the market for bespoke operational risk insurance is becoming more mature.

Current practices vary across the industry. While all respondents to our survey purchase some classes of insurance, currently just under half of them (48 %) are factoring the benefits of insurance into their modelling and/or assessment of operational risk capital requirements (although a further 20 % of firms are considering doing so). Similarly, when operational risk modelling is undertaken, the connection with the insurance programme is not always considered.

Analysis and modelling should be conducted in a robust, repeatable and well documented manner in line with good practices. Doing so ensures that actual insurance policy coverage is accurately reflected, enabling firms to take more informed risk management decisions.

Appendix A

Project team

We would like to thank those listed below for their work on this document. It should be noted that contributions have been made in a personal capacity and any views expressed are those of the individuals concerned and not their employers.

Workstream leader:

Philip Whittingham, Head of Model Validation and Risk Governance (including Operational Risk), XL Catlin

Consultancy support:

Thomas Jaeggi, Head of Operational Risk Advisory, Marsh Risk Consulting UK

Francesca Mazzucchelli, Managing Consultant, Operational Risk Advisory, Marsh Risk Consulting UK

ORIC International support:

Caroline Coombe, Chief Executive, ORIC International

The IMIF steering committee comprises:

Phil Whittingham, IMIF Chairman, XL Catlin

Kieran Barnes, Bank of England (PRA)

Raphael Borrel, LV=

Sebastien Delfaud, Bank of England (PRA)

Vishal Desai, Bank of England (PRA)

Steven Graham, Institute and Faculty of Actuaries

Joe Reid, Standard Life

Michael Hosking, Faraday

Eamon McGinnity, KPMG

Matthew Pearlman, LCP

David Skinner, PwC

Grace Sweeney, Central Bank of Ireland

Russell Ward, Milliman

Carolyn Williams, IRM

Neal Writer, EY

Appendix B

Participant profile

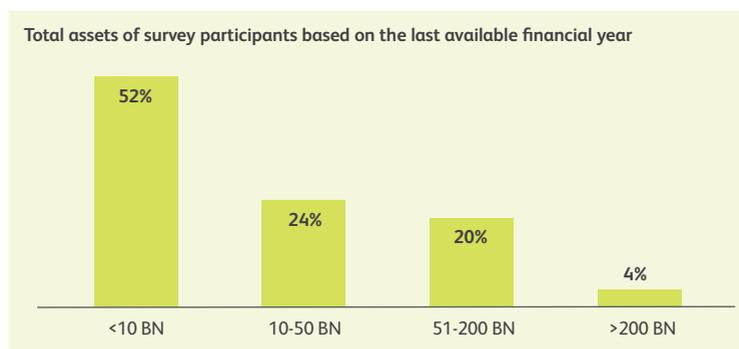
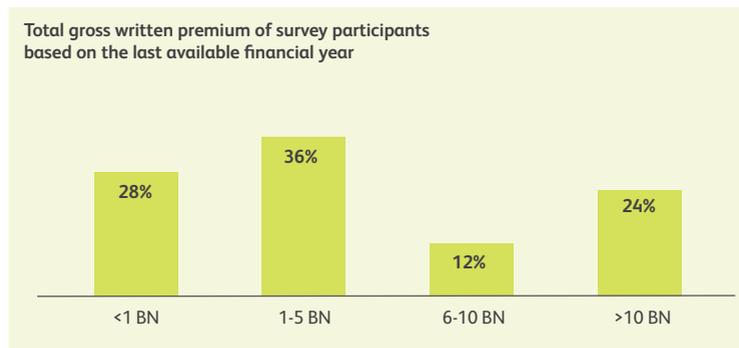
25 insurers took part in the survey. As shown in the figures below, firms of all sizes were represented.

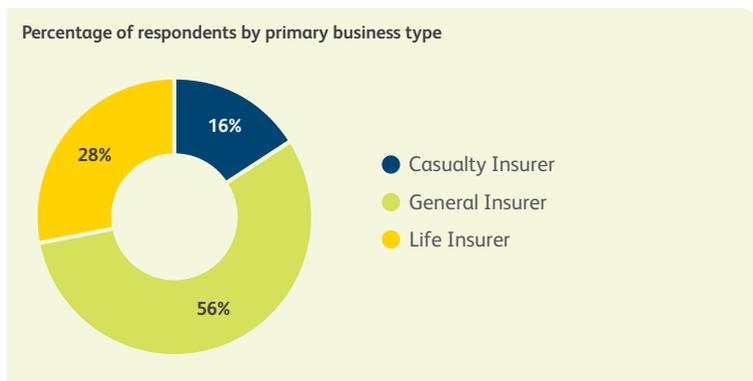
Of the firms taking part to the survey, 56% were general insurers (property and casualty), 28% were life insurers, and the remaining 16% were casualty insurers.

The survey covered a range of firms by size: 28% had annual gross written premiums of less than GBP1 billion surplus space, 36% from GBP1 billion to GBP5 billion, 12% from GBP6 to GBP 10 billion, and 24% above GBP10 billion

Among these firms, 52% use the standard formula for calculating capital requirements for operational risk, while 48% of respondents use an internal model.

Exhibit 10: Survey participants profile





The Internal Model Industry Forum

This document has been produced by the Internal Model Industry Forum (IMIF). The Institute of Risk Management (IRM) set up the IMIF in 2015 to address the key questions and challenges that insurers face in the use, understanding and validation of internal risk models. It is designed to work in a collaborative way to develop and share good practice to ensure that these models add value to the organisation and support regulatory compliance. IMIF now has over 450 members and we have run a series of Forum meetings to explore key issues. A number of workstreams are also undertaking research and we aim to publish the results along with other useful resources and guidance.

As the leading organisation promoting education and professional development in all aspects of risk management, IRM is pleased to be able to support this industry initiative to share good practice

More information about the IMIF and its work can be found on the IRM website www.theirm.org

Who are the IRM?

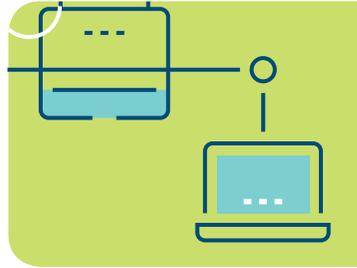
This work has been supported by members of IRM, which has provided leadership and guidance to the emerging risk management profession for over 25 years. Through its training, qualifications and thought leadership work, which includes seminars, special interest and regional groups, IRM combines sound academic work with the practical experience of its members working across diverse organisations worldwide. IRM would like to thank everyone involved in the IMIF project.

Who are ORIC International?

Founded in 2005, ORIC International is the leading operational risk consortium for the (re)insurance and asset management sector globally. The consortium currently consists of 40 members with accelerating international growth.

ORIC International is a not-for-profit organisation dedicated to helping its members enhance the capabilities of their operational risk functions. We facilitate the anonymised and confidential exchange of operational risk intelligence between member firms; providing a diverse, high quality pool of quantitative and qualitative information on relevant operational risk exposures.

As well as providing operational risk event data, ORIC International also provides industry benchmarks, undertakes leading edge research, sets trusted standards for operational risk and provides a forum for members to exchange ideas and best practice. Our comprehensive offering is designed to empower operational risk professionals to help the business and their Board in the identification, assessment, management/measurement, monitoring and reporting of operational risk.



IRM

T: +44(0) 20 7709 9808

E: enquiries@theirm.org

www.theirm.org

Institute of Risk Management

2nd Floor, Sackville House
143-149 Fenchurch Street
London
EC3M 6BN
United Kingdom

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As a not-for-profit organisation, IRM is reliant on industry support to publish guidance like this. We would like particularly to thank the following organisations who have made this publication possible:



pwc

PricewaterhouseCoopers LLP

David Skinner

david.w.skinner@uk.pwc.com

Bill Gasson

bill.gasson@uk.pwc.com

www.pwc.co.uk/



Russell Ward

russell.ward@milliman.com

uk.milliman.com/



ORIC International

T: +44(0) 20 7216 7355

E: enquiries@

oricinternational.com

www.oricinternational.com



Francesca Mazzucchelli

Francesca.Mazzucchelli@

marsh.com

www.marsh.com



Neal Writer

nwriter@uk.ey.com

www.ey.com



Matthew Pearlman

matthew.pearlman@lcp.uk.com

www.lcp.uk.com