



International Actuarial Association
Association Actuarielle Internationale

IAA Risk Book Introduction: Using the Risk Book

Insurance
Regulation
Committee

March 2023





IAA Risk Book

Introduction: Using the Risk Book

**This paper has been developed and approved
by the Insurance Regulation Committee of the IAA**

605 - 75 Albert Street, Ottawa, Ontario K1P 5E7Canada

www.actuaries.org

Tel: +1-613-236-0886

Email: secretariat@actuaries.org



Comment and feedback

Comment and feedback on Risk Book chapters is welcomed.

To provide comments on chapters of the Risk Book or to report any problems with the website, please send an email directly to: riskbookcomments@actuaries.org.

Version

Number	Date Approved	Author(s)	IAA Reviewer(s)
1.0	July 2022	Jules Gribble	Nick Dexter, Stuart Wason
	March 2023	Jules Gribble (RB Chapter Table)	



Table of Contents

1	Risk Book context	5
1.1	Purpose of this chapter	5
1.2	Background	5
1.3	Purpose of IAA Risk Book.....	6
1.4	Availability.....	6
1.5	Audience.....	6
1.6	Terminology.....	7
1.7	Ongoing and evolving process.....	7
1.8	Contributors and comments	7
1.9	Governance	8
2	Using the Risk Book.....	8
2.1	Accessing chapters.....	8
2.2	Summary of Risk Book structure.....	8
2.3	Risk Book Structure (March 2023)	9



1 Risk Book context

1.1 Purpose of this chapter

This Risk Book chapter:

- Explains the background and purpose of the Risk Book, its intended audiences and clarifies that it is an ongoing and evolving project.
- Explains the Risk Book structure and so how to access Risk Book chapters and some additional IAA material, and
- Provides a listing of current Risk Book chapters in a structured format.

1.2 Background

The actuarial profession has contributed significantly to the development of risk management tools and processes, in the insurance, pensions and related industries. Actuarial practice continues to improve the understanding, measurement and communication of risk and its implications through the development of tools, and increasingly processes, to manage the future uncertainty of risks in a sustainable and transparent fashion. These tools and processes trace, manage and mitigate the acceptance and transmission of the uncertain outcomes of risks. This focus serves in a similar aspirational capacity to the way that accounting debits and credits trace the acceptance and transmission of cash. Improved risk management and understanding allows industry stakeholders, including actuaries, supervisors and management, to clarify risk exposures, recognize their sensitivities and provide sustainable, ongoing, management oversights.

The actuarial profession is strategically positioned to contribute to and advance the development of risk management tools due to its emphasis on ensuring sustainable pooling of risk for all stakeholders. The aspects of the profession that contribute to making this possible include:

- A widely recognized body of learning derived from research, education, training and practical experience at a high level;
- Specialized and general knowledge and skills;
- Adherence to high ethical and technical standards;
- Being subject to a formal disciplinary process; and
- A self-declared professional mission to consider and contribute to the needs of the public beyond its members' personal gain.

From this foundation, actuaries have developed globally recognized skills and expertise to help ensure the long run sustainability of pooled risk ventures and arrangements. These open-ended problems, while complex, are manageable if approached in a disciplined and thoughtful manner.

The Risk Book provides insight into existing actuarial tools and processes and the synergistic value of their integrated use. We expect it will also support the development of, and added value arising from, emerging actuarial tools and processes.



Risk Book chapters provide accessible descriptions of tools and processes available to a range of audiences, including actuaries, but caters to readers who may not be actuaries or experts in the topics discussed.

1.3 Purpose of IAA Risk Book

The objective of the Risk Book is to provide a set of high-quality reference materials to support a better understanding of the risks and the inherently uncertain future outcomes that must be managed by businesses when delivering financial services products, insurance, investments, retirement incomes and so on.

The Risk Book is meant to be accessible to a wide range of readers, many of whom may not be actuaries or experts in the areas discussed. There is, therefore, a focus on being descriptive and conveying ideas and concepts rather than providing formal mathematical derivations and discussions. More detailed and formal actuarial material is available from other sources, including the IAA website, www.actuaries.org.

In this context the Risk Book explicitly seeks to reach out both to actuaries and to the broader community that uses (or should use) actuarial services to better manage the risks inherent in their businesses.

Each Risk Book chapter addresses key issues for its topic. When available, some references to additional information may also be provided.

Most Risk Book chapters can be read on a “stand-alone” basis. That is, the Risk Book is not intended to be read sequentially from beginning to end, but to be “dipped in to” as needed as an ongoing resource. Readers may find it useful to review the chapters in the Introduction set of chapters before proceeding further. For example, these chapters provide an introduction to the concepts of risk and uncertainty which underpin many of the discussions in the Risk Book.

In practice, the extent to which readers can effectively dip in and out may depend on their level of knowledge and familiarity with the various topics.

1.4 Availability

Risk Book chapters are publicly available on the IAA website.

See www.actuaries.org and follow the path to “*Knowledge / Publications / IAA Risk Book*”

1.5 Audience

The intended Risk Book audiences include:

- Actuaries and actuarial students;
- Users of actuarial services, such as Boards and senior management;
- Supervisors of financial services that use actuarial inputs;
- Analysts and other interested parties; and
- Educators and trainers.



Many in these audiences may not be actuaries, or experts in the topics discussed. The Risk Book is intended to be accessible to all these audiences. As noted above, more detailed and formal actuarial material is available from other sources, including the IAA website, www.actuaries.org.

1.6 Terminology

As indicated above, a key aspect of the risk book is to provide insight into the ideas and concepts behind actuarial topics and concepts. It is focused on being descriptive rather than being formal and mathematically precise. The Risk Book only provides general advice and information and does not consider the specific circumstances of any reader. To address the particular situation of a reader, the reader should consider obtaining more specific professional actuarial advice that reflects their particular circumstances.

Specific actuarial terms are used on occasion. In general, these terms will be identified and discussed in the Risk Book chapters as appropriate.

An example is the use of the word “supervisor”. In financial services, the terms “regulator” and “supervisor” are sometimes used inter-changeably despite some real differences in function. The Risk Book uses the term “supervisor” to include both functions unless the term “regulator” is clearly more appropriate.

1.7 Ongoing and evolving process

The Risk Book is a dynamic and evolving resource that builds and is updated over time to include and enhance risk topics of current interest. This will encourage readers to make repeat visits to it to learn about new and evolving risks, their potential impacts, their interrelationships, and their management.

This may also encourage additional research and generate relevant spin-off topics.

Risk identification and management is a core part of the actuarial toolkit and contributes to users of actuarial services to support their informed decision making. This includes the traditional areas of actuarial expertise, such as insurance (life, general and health), pensions (defined benefit, defined contribution and social), asset management (asset liability matching, dynamic hedging, investment management, etc) and enterprise risk management (capital, solvency, operational risk etc). It will also include new and emerging areas, such as cyber risk, the impact and disruption of business models due to technology, the rise of behavioral economics in understanding consumer behavior and balanced management of reasonable expectations, and the development of financial inclusion.

Risk Book chapters will be reviewed periodically at least every 5 years and more frequently if significant changes or developments occur.

1.8 Contributors and comments

Many people have contributed to the Risk Book. Contributors are listed on the Risk Book website.

To submit comments or questions about a Risk Book chapter, to make other comments about the Risk Book, or to report any problems with the website, please email: riskbookcomments@actuaries.org. To express interest in becoming involved with the Risk Book please go to the website and provide the requested information.



1.9 Governance

The development and maintenance of the Risk Book is managed by the Risk Book Editorial Board of the IAA Insurance Regulation Committee. Members, current and past, are listed in section 3.2.

2 Using the Risk Book

As indicated in the previous section, the Risk Book is intended to be ‘dipped into’ in a way that helps the reader address a specific question without needing to go through preceding chapters.

2.1 Accessing chapters

The Risk Book chapters are not numbered providing flexibility with their management, allowing new chapters to be included in the appropriate places, allowing old chapters to be removed, and allowing chapter to referred to, and be available from, multiple locations.

This is accomplished by establishing a flexible and adaptable multi-level taxonomy or hierarchy that provides readers with an index to easily find chapters of interest. It also provides readers with other related chapters that may then also be of interest.

2.2 Summary of Risk Book structure

This gives a three-level taxonomy of index to guide readers. This may be expanded in the future if needed. The three levels are:

- Level 1. This indicates the main area of knowledge. An analogy is that this provides the bookshelf to go to in a ‘library’.
- Level 2. This indicates a selection of a topic within a given main area of knowledge. The analogy continues with this choice providing the book on the shelf chosen at level 1.
- Level 3. This indicates the Risk Book chapter names within the area. These complete the specification of chapter. There may be multiple Risk Book chapters at this level.

As noted earlier, the Risk Book is intended to be a dynamic and evolving resource that builds and is updated over time to include and enhance risk topics of current interest. Consequently, its structure may also change and be refined over time.

The table in the next section outlines the current structure of the Risk Book chapters.

Some additional IAA materials, which complement the Risk Book, are referred to. These are included in the following table under the heading “Other IAA Materials”. Note that these materials do not include all IAA publications and if a reader seeks more material, they should review the full listing of IAA publications (see the “*Knowledge / Publications*” drop down on the IAA website). They may also consider reviewing the publications available from the actuarial association(s) in their country.



2.3 Risk Book Structure (March 2023)

RB Level 1: Area	RB Level 2: Topic	RB: Level 3: Chapter Name	Other IAA material
Using the Risk Book			
Introduction: Using the Risk Book (2023)			
Introduction			
	Overview Core concepts Introduction to actuarial areas	Actuarial value add (2023) Risk and uncertainty (20xx) Materiality, proportionality etc (20xx) Introduction to Inclusive Insurance (2021)	Addressing the gap in actuarial services in inclusive insurance (Paper 2014) Assessing Risk and Proportionate Actuarial Services in Inclusive Insurance Markets — An Educational Paper and Toolkit (Paper 2018)
Actuarial roles			
	Overview Professional standards Financial statements	To be considered Professional standards – Purpose and requirements (20xx)	Discount rates in financial reporting (Book 2013) Risk Adjustments for insurance contracts under IFRS17 (Book 2018)
Risk frameworks			
	Overview Governance	To be considered Governance of models (20xx)	



RB Level 1: Area	RB Level 2: Topic	RB: Level 3: Chapter Name	Other IAA material
	Control functions Group issues Enterprise risk management	Actuarial function (20xx) Consequences of insurance groups (20xx) ERM insights from failures and near failures (2023)	Actuarial aspects of ERM for insurance companies (Paper 2016)
Risk management tools			
	Overview Underwriting Reinsurance Asset-Liability management Hedging Stress and scenarios testing Internal models Liquidity Market instruments	To be considered Non-proportional reinsurance (20xx) Intra-group reinsurance (20xx) Asset liability matching (20xx) Dynamic hedging (20xx) Stress testing and scenario analysis (20xx) To be considered Catastrophe bonds	Comprehensive Actuarial risk evaluation (Paper 2010) Intra-group reinsurance transactions (Paper 2013) Stress testing and scenario analysis (Paper 2013) Stochastic modeling Book (2010) Note on use of internal models for risk (Paper 2010)
Reporting and using actuarial work			
	Overview Financial position Future financial condition	Actuarial reports (20xx) Financial statement (20xx)s ORSA (20xx)	Deriving value from ORSA – Board perspective (Paper 2015)
Asset risks			



RB Level 1: Area	RB Level 2: Topic	RB: Level 3: Chapter Name	Other IAA material
	Overview Credit risks Market risks	To be considered To be considered To be considered	
Liability Risks			
	Overview Life insurance risks General insurance risks Health insurance risks Pension risks Operational risks Social Security	 Policyholder behaviour and management actions (2022) Mortality disruption (20xx) Hazard risks (20xx) Catastrophe risks (20xx) Non-Life liabilities (2022) To be considered Pension supervision Defined Benefit Pensions Operational risk (20xx) Distribution risks (20xx) Market conduct risk (20xx)	 Measurement of liabilities for insurance contracts: Current estimates and risk (Paper 2009) Analysis of the risk of EBOLA (Paper 2015) Note on enterprise risk management for pensions (Paper 2011) Role of actuarial calculations and review in pension supervision (Paper 2015) Defined benefit funding – actuarial role (Paper 2018) Actuarial obligations of Social Security systems (Paper 2018)



RB Level 1: Area	RB Level 2: Topic	RB: Level 3: Chapter Name	Other IAA material
	Inclusive insurance	Long-term care Personalised medicine Introduction to Inclusive Insurance (2021)	Stochastic projections of the financial experience of social security programs (Paper 2012) Long term case. Actuarial perspective (Paper 2017) Impact of personalised medicine and genomics (Paper 2017) Addressing the gap in actuarial services in inclusive insurance (Paper 2014) Assessing Risk and Proportionate Actuarial Services in Inclusive Insurance Markets — An Educational Paper and Toolkit (Paper 2018)
	Retirement		Determination of retirement and eligibility ages: impacts (Paper 2016)
Solvency			
	Overview Capital Adequacy Insolvency Systemic risks	Capital – A regulatory management tool (20xx) Resolution of insolvencies (20xx)	A global framework for insurer solvency assessment (Book 2004) Actuarial viewpoint on and roles in systemic risk regulation in insurance markets (Paper 2013)
Other risks			
	Climate related risk		Decarbonisation: Briefing for actuaries (Papers 2018) Climate change and mortality (Paper 2017)



International Actuarial Association
Association Actuarielle Internationale

IAA Risk Book
Introduction: Using the Risk Book

IAA Risk Book

Introduction: Using the Risk Book

Website: See www.actuaries.org and follow the path to “*Knowledge / Publications / IAA Risk Book*”.

Feedback: Please send to riskbookcomments@actuaries.org