



International Actuarial Association  
Association Actuarielle Internationale

# IAA Risk Book Liabilities for General Insurance

Insurance Regulation  
Committee

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# IAA Risk Book

## Liabilities for General Insurance<sup>1</sup>

**This Risk Book chapter has been developed and approved  
by the Insurance Regulation Committee of the IAA**

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<sup>1</sup> In various regions of the world, “General Insurance” is also known as “Non-Life” insurance, or “Property and Casualty (P&C)” insurance.



## 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 to [riskbookcomments@actuaries.org](mailto:riskbookcomments@actuaries.org).

## Version

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## Introducing the IAA Risk Book

The actuarial profession has contributed significantly to the development of risk management tools and processes, in insurance, pensions and related industries. Actuarial skills are also increasingly being applied in new and developing areas of knowledge.

Actuarial practice continues to improve the understanding, measurement and communication of risk and risk events and their implications through the development of tools and increasingly processes to manage the future uncertainty of risks in a sustainable and transparent way. These tools and processes trace, manage and mitigate the acceptance and transmission of the uncertain outcomes of risks.

The Risk Book is intended to provide high-quality reference materials to support a better understanding of the risks and inherently uncertain future outcomes that need to be managed when delivering financial services products – whether they involve insurance, investments or retirement incomes, or more broadly. The Risk Book is written to be accessible to a wide range of readers, many of whom may not be actuaries or experts in the areas discussed but may be decision-makers in those areas. Consequently, the Risk Book should provide insight into the ideas and concepts behind actuarial topics and concepts. It is therefore focused on being descriptive rather than being formal and mathematically precise.

All the Risk Book chapters are publicly available on the IAA website and are periodically updated. See [www.actuaries.org](http://www.actuaries.org) and follow the path to 'Publications' and then to 'Risk Book'. A discussion of their structure and relationships is provided in the Chapter: *Introduction – Using the Risk Book*.

The Risk Book is intended to be a dynamic and evolving resource, updated over time, reflecting new areas where actuarial expertise can add value, experience and advances, and topics of current interest and importance. It is electronically distributed to support ongoing updates. Risk Book chapters will be reviewed periodically at least every 5 years and more frequently if significant changes or developments occur.

The development and maintenance of the Risk Book is managed by the Risk Book Editorial Board of the IAA Insurance Regulation Committee.

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

To submit comments or questions about this Risk Book chapter, or to report any problems with the website, please email [riskbookcomments@actuaries.org](mailto:riskbookcomments@actuaries.org). To express interest in becoming involved with the Risk Book please go to the website and provide the requested information.

## 1 Overview

### 1.1 Introduction

This chapter begins with a discussion of common differences between life insurance and general insurance. It then discusses the major categories of general insurance liabilities, including a review of the more important characteristics of those liabilities. Next is a discussion of major offsets to those liabilities (sometimes accounted for as contra-liabilities, sometimes as assets), including ceded reinsurance or retrocessions. The chapter ends with various categories of miscellaneous liabilities for general insurance and industry-segment-specific considerations for the evaluation of those liabilities.

When discussing characteristics of life insurance, the chapter is focusing on life insurance and annuities in particular.<sup>2</sup>

Although the following describes typical characteristics in many jurisdictions, it should be noted that exceptions do exist, and can arise from either product or jurisdictional differences.

### 1.2 Purpose of this chapter

The purpose of this chapter is to cover basic information concerning general insurance liabilities which stakeholders may need to know when reviewing the financial accounts of a general insurer. It is written with the presumption that the reader is somewhat familiar with life insurance and annuities<sup>3</sup> but unfamiliar with general insurance.

### 1.3 Relevance to actuaries

Actuaries are intimately involved with the calculation of liabilities for general insurance, so actuaries new to general insurance reserving should be interested in this introduction to the subject.

### 1.4 Executive summary

The liabilities for general insurance are generally of a materially<sup>4</sup> different nature than those for life insurance.

Insurance contract liabilities related to the coverage provided can be split into two general categories:

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<sup>2</sup> Life insurers may also see disability and health products (such as long-term care insurance) that may have some of the characteristics of general insurance. For simplicity's sake, this chapter will not be referring to those types of products when discussing characteristics of life insurance.

<sup>3</sup> For this reason, some concepts are first introduced briefly from the perspective of life insurance contracts before a discussion of the situation in more detail for general insurance contracts.

<sup>4</sup> The terms "materiality", "material" and variations thereof are used in this chapter in the accounting sense, and not based on any fixed criteria for measuring materiality. Briefly, an item is considered material in an accounting sense if its omission or misstatement would impact the reaction of a user of that information.

- Those related to future coverage under existing insurance contracts (called “pre-claim” or “pre-claim event liabilities” in this chapter<sup>5</sup>)
- Those related to coverage for past events under existing insurance contracts (called “post-claim event” liabilities in this chapter, or just “claim liabilities”).

In life insurance, the largest liability is generally the pre-claim liability, with this liability being the one with the greatest uncertainty. Claim liabilities for life insurance tend to be relatively straightforward in their estimation with relatively short payouts. In contrast, in general insurance the largest liability is generally the claim liability, with significant uncertainty surrounding both amount and timing, while the general insurance pre-claim liabilities tend to represent limited valuation risk and are often calculated mechanically with no actuarial involvement.<sup>6</sup>

The claim liability estimation process usually involves professional judgment in the use of multiple actuarial methods.<sup>7</sup> The results of this process are used to determine a range of “reasonable” estimates from which a specific value is then selected. Due to the uncertainty of this liability and its materiality to general insurance balance sheets, most jurisdictions have instituted comprehensive regulatory reporting requirements to permit the evaluation of its reliability.

It is important to note that there may be offsets to liabilities for general insurance, with ceded reinsurance often among the most significant. There are also additional miscellaneous liabilities that may be found on general insurer balance sheets, although these may not be material to general insurance solvency valuations.

## 2 Life Insurance versus General Insurance differences

The characteristics of liabilities for life insurance are generally very different from those of general insurance. Some of these major differences are:

- The length of the contract term, including the meaning of the term “renewal”, and the resulting importance (or limited importance) of investment income
- The degree of judgment in the estimation of and associated risk/uncertainty for pre-claim event liabilities versus post-claim event liabilities
- The relative importance of claim adjustment expenses
- The relative importance of in-force policies to the balance sheet

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<sup>5</sup> In some jurisdictions these are often referred to as unearned premiums for general insurance contracts and the Liability for Remaining Coverage (LRC) under International Financial Reporting Standard 17 (IFRS 17). They represent insurance policy liabilities for the future coverage period of an existing policy (that has been recognized for financial reporting purposes). The LRC under IFRS 17 contrasts with the LIC, or Liability for Incurred Claims.

<sup>6</sup> An exception may exist where the accounting system allows for “gain at issue”, such as under Solvency II. In such a system the pre-claim liability valuation would involve a cash flow analysis and decision on whether or how to reflect non-claim underwriting expenses in those future cash flows. This can result in material increases to available capital even before the contract is effective. Neither IFRS 17 nor U.S. Generally Accepted Accounting Principles allow “gain at issue”.

<sup>7</sup> With very rare exceptions (e.g., some evaluations of asbestos liabilities).

- The pace of change in the underlying risk
- The benefit level vis-à-vis financial market variables

## 2.1 Length of the contract term

Life insurance and annuity contracts are typically “long duration” contracts, in that the contract length or term is typically (in most jurisdictions) multiple years in length, if not decades long. Where the premium is not paid entirely up-front, future premium payments are considered to be renewals of the same contract (where the contract terms and premium amount or premium terms are generally set at inception of the contract). Lack of continued premium payment is considered a “lapse” of the contract.

In contrast, most general insurance contracts have a length of one year or less. When such contracts “renew”, the renewal is a separate new contract that can have separate coverage terms, limits, and premium determination. As such, the term “lapse” does not apply to contract termination but rather to the end of a customer relationship.

The implication of the above is that the time value of money is frequently an essential part of the liability valuation for life/annuity contracts, while it may be an immaterial complication (and hence perhaps unnecessary) to the valuation for many general insurance contracts. A limited exception can exist for annuity-type benefits in some jurisdictions/products, but even here such annuity-type benefits are generally only a small part of the total claim liability for many if not most general insurance writers.

## 2.2 Pre-claim event liabilities versus claim event liabilities

Life insurance contracts generally provide for a stated benefit given a stated event (i.e., the death of the insured). The occurrence of the event is objectively determined and generally is not a subject of dispute – for instance, the insured person either died or did not die.<sup>8</sup> There is no such thing as a partial death, hence no possibility of a partial loss or payment of only a portion of the stated benefit. As a result, for most life/annuity contracts the claim payment process is relatively quick and straightforward, with the post-claim event liability valuation for such contracts being a relatively trivial exercise. (For the remainder of this chapter the term “pre-claim liability” will be used for pre-claim event liabilities, and “claim liability” will be used for post-claim event liabilities.)

The pre-claim liability valuation, however, can be much more complicated for long-duration life/annuity contracts. The valuation needs to reflect the time value of money, which may change over the life of the contract due to changes in interest rates. The claims risk will also change over time as the underlying insureds become older, with views of mortality risk changing due to various societal and medical factors. The valuation may also need to reflect the impact of level premium payments over the lifetime of the contract, despite changes in mortality risk and the time value of money over the same lifetime.

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<sup>8</sup> Similarly, for life contingent annuities the claimant is either alive or deceased on the payment date.

Hence for life/annuity contracts the pre-claim liability valuation<sup>9</sup> is generally far more uncertain than the claims liability and the focus of most of the actuarial expertise and judgment, while the claims liability exercise may be a highly objective and straightforward valuation.

In contrast, the benefit under many general insurance contracts (such as motor/auto insurance) is often based on a somewhat subjective valuation of damages, especially when litigation is involved. Whether the covered event even occurred may also be subject to dispute and may not even be amenable to objective verification. Partial losses (i.e., losses that are a fraction of the policy limit) are common, claims closed without any payment are not unusual and multiple claims can occur during the policy period for the same covered risk. Claims for some policies may be reported decades after the policy has expired, and some claims can stay open and unresolved for more than a decade (in jurisdictions with more contentious litigation environments). Hence there can be tremendous uncertainty for general insurance claim liabilities as to both amount and timing.

The pre-claim liability for general insurance contracts, however, is often a trivial exercise. This liability is frequently a mechanical calculation, representing a pro-rata portion<sup>10</sup> of the full policy premium, running off over the policy term.

In summary, for life insurance contracts the pre-claim liability is frequently a source of material uncertainty requiring actuarial expertise, with the claim liability being a trivial exercise.<sup>11</sup> For general insurance contracts the reverse is true – the pre-claim liability valuation is generally a trivial exercise, while the claim liability is commonly a major source of uncertainty requiring actuarial expertise. For general insurers the claim liability is commonly the largest liability on the balance sheet, and its estimation is frequently the largest source of solvency risk on the balance sheet.

### 2.3 Relative importance of claim adjustment expenses

The expense associated with settling (“adjusting”) claims is generally a minor issue and a relatively small liability for life/annuity insurance. In contrast, such costs are frequently material for general insurance, due to both the cost of adjusting claims (common to all product types)<sup>12</sup> and the cost of providing defense services for third-party liability claims (included as part of claim adjustment

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<sup>9</sup> Pre-claim liabilities may be referred to as “policy reserves” and/or “active life reserves” for life/annuity contracts. The term analogous to “policy reserves” for general insurance contracts is generally “unearned premium reserves”. They are included along with claims liabilities in the term “technical provisions” used by various jurisdictions. Note that the annuity liability for payments contingent on the future survival of the annuitant is a pre-claim liability, even for annuities in the payout phase.

<sup>10</sup> This is the most common situation. Under IFRS 17 for contracts under the Premium Allocation Approach, the premium is recognized based on the expected pattern of incurred expenses (paraphrase of IFRS 17, paragraph B126), if “the expected pattern of release of risk” is not pro rata.

<sup>11</sup> As stated earlier, this is referring to life and annuity contracts. It is acknowledged that liability estimates for disability claims can create similar issues as for general insurance claim liabilities, although even in that case the uncertainty relates to whether or not a payment is to be made, and not the amount of any triggered payment.

<sup>12</sup> In general insurance, claim adjustment expenses include the costs to perform a number of claim-related activities, such as determining if a claim is covered and (if covered) the extent of coverage, establishing initial case estimates and managing a final settlement. The costs of litigating coverage disputes (e.g., those associated with business interruption coverages during the Covid-19 pandemic) are also included in claim adjustment expenses.

expenses). For such third-party liability coverages, these defense costs can be even greater (sometimes much greater) than the liability for claim payments. Defense costs are driven by attorney and related court costs, and for some product lines this represents the major policyholder benefit from the contract.

Estimation of defense costs for third-party liability insurance contracts can entail a significant amount of uncertainty, especially when such costs are not capped by policy limits. This is due to the high level of attorney fees in most jurisdictions, as well as the uncertain length of litigation. (In some jurisdictions a civil court case can take over a decade to resolve.) In general, the longer it takes to resolve a litigious matter, the higher the attorney fees.

## 2.4 Relative importance of in-force policies to the balance sheet

Because the claim settlement process for life/annuity contracts is typically straightforward (i.e., stated claim amount, no partial losses, objective determination of triggering event), nearly all the liabilities on the balance sheet are from in-force policies. This is in sharp contrast to the situation for many general insurance products with long payment tails. While the general insurance products may have relatively short policy terms (e.g., 12 months or less), the payment period for the resulting claims may take years or decades. This can result in most of the liabilities on some general insurers' balance sheets coming from policies no longer in-force (depending on the products and jurisdictions written).

## 2.5 Pace of change in the underlying risk

The underlying risk for life insurance, that being mortality, is relatively slow to change from year to year. While there may be fluctuation from one year to the next in actual mortality (e.g., due to an unusually bad flu season), mortality trends in most jurisdictions generally move gradually over time. In comparison, the underlying risk for general insurance coverages can change more quickly and frequently due to susceptibility to both internal and external factors, such as:

- New court rulings (e.g., interpretations of policy language)
- Societal trends (e.g., reduced tolerance for drunk driving)
- Technology (e.g., cyber risks, automobile safety improvements<sup>13</sup>)
- Changes in behaviors (e.g., working from home in response to a pandemic)
- Infrastructure changes
- Weather

One consequence of this pace of change is that general insurance data from just a few years ago may be viewed as having questionable relevancy, and data from a decade ago might be viewed as irrelevant.

## 2.6 Benefit level vis-à-vis financial market variables

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<sup>13</sup> These include various “advanced driver assistance systems” (ADAS), such as automated emergency braking and lane departure warnings.

For many life/annuity products the actual benefit level or contractual “surrender”/cancellation value of the policy is a function of financial market variables (such as interest rates or financial market indices). In contrast, the benefit/claim amount for general insurance products is a function of the underlying damage or injury and is typically not a function of any interest rate or financial market index. This makes life/annuity liabilities much more susceptible to financial market risks than general insurance liabilities.

The remainder of this chapter will concentrate solely on general insurance liabilities. These are generally split into pre-claim or pre-event liabilities, and post-claim or post-event liabilities (generally labelled “claim liabilities”).

### 3 Pre-claim liabilities

The two most common categories of pre-claim liabilities for general insurance are the unearned premium liability (representing the portion of the premium on in-force policies for future coverage periods) and premium deficiency liabilities.

#### 3.1 Unearned premium liability<sup>14</sup>

The unearned premium liability represents the portion of the premium on in-force policies that is meant to cover claims, expenses, risks and profit for future coverage periods.<sup>15</sup> It is typically calculated based on a pro-rata allocation of premium to coverage period.<sup>16</sup> For example, a 12-month policy, effective July 1, 20XX, with a premium of \$1,000 would still have half the policy premium “unearned” after 6 months on December 31, 20XX.<sup>17</sup> Therefore in this example the unearned premium liability at December 31, 20XX would be \$500.

In some jurisdictions this “unearned” amount is netted against prepaid acquisition expenses. Assuming these expenses are 20% of the premium, the unearned premium liability on December 31, 20XX in this example would be \$400 (= \$1,000 x 80% x 50%). Some jurisdictions may also net premium receivables (discussed later in this chapter) against this liability.

As seen by the above example, the calculation of an unearned premium liability is generally a very mechanical calculation, not requiring actuarial expertise and frequently performed mechanically by an insurer’s premium accounting system with no manual intervention. As a result, the risk associated with the misestimation of the pre-claim liability is minimal, with such premium liabilities running off in a

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<sup>14</sup> Also known as the “unearned premium reserve” in some jurisdictions, the Liability for Remaining Coverage under IFRS 17 and the “pre-claim liability” in some discussions.

<sup>15</sup> That is, for periods beyond the valuation date. In certain situations, this liability includes amounts for expired policies, but those are special cases. Some examples of these special cases, as mentioned later in this chapter, include retrospective premium adjustments and audit premiums. These special cases may also result in contra-liabilities or assets.

<sup>16</sup> Many accounting paradigms do allow for the reflection of seasonal patterns in allocating premium to coverage periods, but this is not commonly done, even where such seasonality reflection is allowed.

<sup>17</sup> This assumes the premium is earned (recognized as revenue) evenly over the policy period, which is typical for annual general insurance policies. It is possible under some accounting paradigms for premium to be earned other than evenly over the policy period, such as where the expected incurred loss pattern reflects seasonality, but this is atypical.

relatively short period of time.<sup>18</sup> Premiums received or policies bound before their effective date generally result in a deposit liability (equal to the premium received or billed), with that deposit liability transitioning into an unearned premium liability upon the effective date.

A common feature of this accounting approach is that an insurer is not allowed to anticipate a profit or gain on writing general insurance policies until the coverage period begins and the premium revenue is recognized; that is, until one can start to observe actual experience under the policy. Such accounting approaches also typically delay recognition of a policy until it becomes effective.

A few accounting approaches do allow the insurer to recognize a gain at issue or upon the binding date of a contract. These generally focus on estimating future cash flow on the unexpired portion of a policy, using what is generally viewed as an economic valuation. Solvency II is one example of such an approach. These approaches create valuation risk noticeably greater than that arising from a no-gain-at-issue approach, although such risk is limited by the relatively short runoff period of these liabilities.

### **3.2 Premium deficiency liabilities (“onerous contract liabilities”)**

It is generally assumed that an insurer does not knowingly write a policy or group of policies at a loss. Sometimes, however, circumstances may result in a temporary or structural problem with the pricing mechanism such that an identifiable segment of the business is expected to generate a net loss, even after the inclusion of investment income. The accounting mechanism to address this situation is the premium deficiency liability (or “onerous contract liability” using IFRS 17 terminology).

The premium deficiency liability is an estimate of the expected loss from the runoff of the premium liability for a group of policies. It is generally calculated on an economic basis. It runs off in the same timeframe as the underlying premium liability; for example, within 6 months on average for a group of 12-month policies. This liability is also used only to reflect an expected loss from the runoff, not expected gains; hence it is not allowed to be less than zero.

A key feature of this liability is the grouping or unit of account utilized for the valuation. The broader the grouping, the less likely such a reserve will exist. Similarly, the more granular the grouping, the more likely that at least one segment of the business will have a loss expected on the premium liability runoff.<sup>19</sup>

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<sup>18</sup> For example, the unearned premium liability for a 12-month policy runs off during those 12 months. Assuming all the policies are 12 months, evenly written during the year, and the premium is earned evenly over the policy period, the average policy is half expired and hence the booked unearned premium liability on an insurer’s balance sheet runs off in 6 months.

<sup>19</sup> For example, a general insurance company’s business model may involve selling multiple products to its customers at the same time. It may decide to purposely sell one of these products at a loss (a “loss leader”), as an incentive for the customer to buy the other product(s). If the unit of account for the premium deficiency calculation combines these various products then no deficiency may exist, while a calculation that separates the individual products may result in a premium deficiency reserve for the loss leader product.

Note that premium deficiency liabilities only exist where the unearned premium liability is based on a no-gain-at-issue assumption, and do not exist where the unearned premium liability is based on an economic valuation.<sup>20</sup>

### 3.3 Other pre-claim liabilities

There are other categories of pre-claim liabilities, or special cases of the above-mentioned pre-claim liabilities. The following are two examples, which are generally only relevant for policies sold to businesses:

- Earned but unbilled estimates (including adjustments for audit premiums and late bookings)<sup>21</sup>
- Accrued retrospective premiums (which can be an asset or liability), discussed in more detail in Section 6

## 4 Claim liabilities

Claim liabilities are typically the largest liabilities for general insurers and often the most significant source of balance sheet risk, particularly in litigious environments. As a result, the estimation of claim liabilities is a major focus for many general insurance actuaries. The recorded estimate for claim liabilities is of such importance for solvency purposes that many jurisdictions require an annual actuarial report providing an assessment of its reasonableness.

### 4.1 Major considerations associated with claim liability estimation

Major considerations associated with the estimation of these liabilities include:

- Amount of claim payments
- Timing of claim payments
- First-party versus third-party differences, including the impact of defense costs
- Nominal values versus economic values

#### *Amount of claim payments*

As mentioned earlier, in most cases the claim payment in general insurance is not a stated amount but is rather a function of the amount of damage or injury, which often contains some degree of subjectivity.

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<sup>20</sup> This is because the premium deficiency liability essentially equals the economic valuation of future cashflows from the unexpired portion of the contract less the held liability, subject to a minimum of zero. If the held liability is determined based on an economic basis, then no premium deficiency liability exists, as the unearned premium represents the expected future losses and expenses associated with the unexpired portion of policies in force.

<sup>21</sup> Audit premiums are common where the premium is based on an exposure measure that is not fully known until after the policy has expired. Two common examples are sales and payroll during the policy period. Where the premium is based on these types of exposure measures, the initial premium is based on an estimate of those measures and then trued up (via an audit adjustment) with the actual values after the policy has expired. Some accounting regimes include the “earned” portion of such future audit premiums as an offset to unearned premium, such that earned premium is not distorted by a lag in booking the audit premium. The mechanics and rationale for this approach are beyond the scope of this chapter.

Even the validity of coverage for the claim may be in question. The resulting judgment, negotiation, or litigation (between the claimant and the insurer) required to determine the value of an individual claim creates amount risk.<sup>22</sup> This risk is reduced and generally made manageable in the aggregate by the statistical theory known as the “law of large numbers”.

Under this theory, as the number of independent results from the same process grows, the ability to generate an appropriate probability distribution for the aggregate result increases and the more likely it is that the actual average aggregate result will represent the expected value for this distribution. It should also be noted that aggregation of a number of loss payments is more stable when no single claim can be large enough to materially impact the result. Hence, lines of business characterized by claims with high frequency and low severity generally produce actual results that are closer to the expected result predicted by the assumed distribution. In contrast, those lines of business characterized by claims with low frequency and high severity tend to produce actual results that can vary significantly from an expected outcome.

The law of large numbers also assumes that all claims are independent of each other. Where this independence does not hold, the variability of actual results around the expected result increases. Examples of the absence of independence would include all claims impacted by a single court ruling, a type of injury suffered by multiple claimants who all would be affected by a single medical finding, or a group of properties all impacted by the same weather conditions or restoration costs.

In practice, the amount risk (in other words, the risk in the estimate of the nominal liability) can create wide ranges in possible estimates, dominating any other sources of claim liability uncertainty.

#### *Timing of claim payments*

Given that the determination of damages and the extent of coverage for a claim is frequently the result of negotiation, if not litigation, resolution can take a long time. In litigious environments the payment lag can reach as much as a decade after the claim event.

Another source of timing uncertainty is the lag in reporting a claim. The local legal system may establish deadlines for the filing of a claim, but even these limits may be waived for certain types of claims (e.g., sexual molestation claims in Canada, asbestos claims in many jurisdictions). These delays in filing claims can be days or months in some jurisdictions for some products, extending to years or decades for other jurisdictions/products.

#### *First-party versus third-party differences*

Non-life insurance products are generally classified as either first-party coverages (covering damages to the insured and/or their property) or third-party coverages (covering the insured from lawsuits and other claims made by third parties against the insured). First-party claims are generally easier to adjust and in most jurisdictions are typically paid in a matter of days or months, hence first-party unpaid claim

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<sup>22</sup> In general insurance, claim payments often result from a combination of measurable expenses (e.g., medical bills, damaged property) and subjective/negotiated awards (e.g., “pain and suffering”, “loss of use”). The variability introduced by this uncertainty around the validity and complexity of each claim payment is the source of the amount risk.

liabilities are generally relatively low.<sup>23</sup> Typically the only reason for first-party claims to stay open for a long period of time is if there are coverage disputes, whereby final settlement requires a court ruling or legal settlement.

Third-party coverages tend to have the greatest uncertainty as to amount and timing, due in large part to the inherent adversarial nature of such claims and the involvement of the court system in most cases. The greater the involvement of the court system, the slower the settlement (and payment) for these claims. In addition, the greater the use of the court system, the more uncertain the amount of the claim (and the higher the claim adjustment expenses associated with the claim).

The claim adjustment expense liability can also be a major part of the total liability for third-party coverages, with the legal defense portion of that liability frequently included in the estimate of the claim liability. These defense cost liabilities can be a major source of uncertainty due to the uncertainty (and cost) associated with litigation in general. In contrast, the claim adjustment expense liability is a relatively minor part of the total liability for first-party coverages. This expense liability is discussed in more detail later in this chapter.

#### *Nominal values versus economic values*

The uncertainty as to amount and timing (and the generally short timeframe for claim payment for many general insurance products and/or jurisdictions) has led certain jurisdictions to opt for the use of nominal (undiscounted) values for general insurance liability accounting. These nominal valuations are not dependent on estimates of the uncertain timing of claim payments, and can be back-tested in a relatively straightforward manner. In contrast, an economic valuation is dependent on estimates of payment timing (which can be very uncertain for many coverages and jurisdictions), interest rates<sup>24</sup> and risk margins.<sup>25</sup> In most cases, the payment pattern and interest rate selection are not major concerns for general insurance liability estimation, but the estimate of the risk margin can be. While risk margins are unquestionably a part of an economic valuation, they always have at least some degree of subjectivity and are not subject to direct observation or back-testing (unlike the estimate of nominal payout or payout timing).

#### *Summary*

Typically, general insurance claim liabilities can be highly uncertain as to both amount and timing. The uncertainty also tends to be materially greater for third-party coverages than for first-party coverages, with defense cost uncertainty being a contributing factor to the greater uncertainty for third-party coverages. The use of economic valuations can also add to the uncertainty due to the subjectivity of the risk margin determination.

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<sup>23</sup> An exception may exist for catastrophes, where the volume of claims all at once and general disruption from the event may result in a significant balance sheet liability and settlement delays. Even then the payment lag is generally shorter than for third-party coverages.

<sup>24</sup> Estimates of claim payment patterns and interest rates are used to produce a discounted value; that is, one that reflects the time value of money.

<sup>25</sup> Some use the terms “risk adjustment” or “margin over current estimate” (MOCE) instead, but they represent the same concept.

## 4.2 Types of claim liabilities

Non-life claim liabilities may be broken out into case estimates versus actuarial estimates.

Case estimates are the estimates of claim values established by the claim adjusters assigned to adjust or settle individual claims. Note that these are estimates, not known values, with their adequacy varying materially by insurer. These estimates are also not “accounting estimates” per se, in that they are not meant to stand on their own as the estimate of the ultimate liability for known, reported claims. Rather, they are meant to reflect the claim management philosophy and practices of the individual insurer, which may have an objective that such estimates should represent a:

- Median value – thereby making them likely to be deficient in the aggregate for the ultimate liability, given that the distribution of claim values is typically skewed
- Mean value – making the estimate too high for most claims, given a typically skewed distribution; this could lead to many claims being settled for an excessive value
- Stretch or optimistic goal – thereby making them almost certainly deficient in the aggregate, but encouraging the adjuster to achieve a lower settlement value
- Conservative or worst-case value (making the case estimates somewhat redundant in the aggregate, and possibly encouraging overly generous settlement of smaller claims)

Each of these measurement objectives has its own strengths and weaknesses with regard to managing a fair and efficient claim adjustment process. In most jurisdictions, the case estimates have historically been deficient in the aggregate, requiring additional liability amounts be established for known claims. This is generally not a solvency concern, as it is the total claim liability that matters for solvency evaluation, not the accuracy of individual components of that liability.

Actuarial estimates are established to bridge the gap between the case estimates for known claims and the ultimate claim liability for all incurred but unpaid claims. These estimates need to address the relative adequacy/deficiency of aggregate case estimates, plus the liability for claims that have been incurred but have not yet been reported. The former estimate is sometimes called Incurred But Not Enough Reported (IBNER<sup>26</sup>) and the latter is sometimes called Incurred But Not Reported (IBNR). In practice many actuarial estimation techniques for claim liabilities do not distinguish between the two (nor provide a split between the two), with the combined estimated liability to bridge the gap between case estimates and ultimate liability labelled (“gross”) IBNR.<sup>27</sup>

Where the claim liabilities are on an economic basis (i.e., discounted and with a risk margin), the discount and risk margin may be incorporated in the case and IBNR estimates, or may be separate estimates determined on an aggregated basis.<sup>28</sup> Determining the discount on a claim-by-claim basis

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<sup>26</sup> This liability is also sometimes labeled the “bulk liability” or “bulk reserve”. Note that there are various definitions of the term “bulk”. For some, “bulk” is inclusive of both IBNER and IBNR, while for others it represents only IBNER.

<sup>27</sup> The portion of IBNR meant to cover only unreported claims is sometimes called “pure” IBNR to distinguish it from the catch-all version of IBNR (i.e., “gross” IBNR).

<sup>28</sup> In other words, the case estimate may be a discounted value with risk margin and the IBNR estimate may be a discounted value with risk margin, or the case and IBNR estimate may be nominal, unbiased estimates with a separate liability for the risk margin and separate contra-liability for the time value discount.

may be done only for the largest claims with the most predictable payment patterns, such as for annuity-type claims arising from certain coverages in certain jurisdictions.<sup>29</sup> The unpredictability of payment amount and timing may also cause an accounting paradigm to restrict time value reflection to only those annuity-type claims, leaving all other claim liabilities on a nominal basis.

### 4.3 Claim adjustment expense liabilities<sup>30</sup>

As mentioned earlier, the claim adjustment expense liability can be material, especially for third-party liability coverages. These claim expense liabilities are frequently split into two categories: allocated claim adjustment expenses and unallocated claim adjustment expenses.

There is no universal definition of allocated claim adjustment expenses, but they are typically defined as claim expenses that can be (and generally are) assigned and traceable to an individual claim. Examples include outside attorney fees (for the provision of legal defense to the insured for a third-party liability policy) and independent adjuster fees.<sup>31</sup> Many insurers include allocated claim adjustment expenses in their case estimates, and for third-party lines may focus on estimating the total of claim plus allocated claim adjustment expense liabilities rather than estimating the two pieces separately.

Unallocated claim adjustment expenses are the rest of the claim adjustment expenses (i.e., those not labelled as “allocated”). These generally represent salary and overhead costs for the claim department. They can also include staff attorneys who may be providing policyholder defense services. Coverage disputes<sup>32</sup> can also arise in some general insurance situations, resulting in significant attorney fees for the insurer. Despite the fact that these can arise from particular claims, they are frequently included in the unallocated claim expense category.

The above descriptions of allocated and unallocated claim expenses are not function-based and hence will not produce comparable splits of claim expense costs across insurers. For example, some insurers may choose to rely on staff employees for certain functions, and account for them in unallocated expenses, while others may choose to rely more on non-employees for those same functions, and account for them in allocated expenses. Hence some accounting regimes have decided to use a functional split rather than an allocated/unallocated split of claim expenses.<sup>33</sup>

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<sup>29</sup> Examples include claims for lifetime disabilities arising from automobile accidents or workplace injuries. As coverage terms vary by jurisdiction, the possibility of annuity-type claims also varies by jurisdiction. For example, some jurisdictions provide for the possibility for annuity-type claims on motor/auto policies, while other jurisdictions only provide motor/auto policies with policy limits that preclude the possibility of annuity claims.

<sup>30</sup> Sometimes called “loss adjustment expense” liabilities, or LAE liabilities. “Allocated LAE” is frequently abbreviated as ALAE. “Unallocated LAE” is frequently abbreviated as ULAE.

<sup>31</sup> Independent adjusters are claim adjusters who are not employees of the insurer but are hired on a contract basis to adjust claims. Frequently they are paid on a claim-by-claim basis, and the cost of using an independent adjuster is easily traceable to an individual claim. The use of independent adjusters can vary materially by insurer, with some making no use of such adjusters, some using them exclusively for all their claims and some using them only for special situations or special types of claims.

<sup>32</sup> Coverage disputes can lead to the insurer or policyholder filing a legal action requesting the court to declare whether coverage exists or not (a “declaratory judgment”). Hence these are sometimes called “DJ actions”, with the associated claim expenses called “DJ expenses”.

<sup>33</sup> This is the approach adopted by the U.S. regulators for their statutory financial statements.

#### 4.4 Actuarial estimates of claim liabilities

There are many different actuarial methods for determining IBNR and ultimate claim liabilities. No one method will work in all instances, and common practice (often recommended by applicable actuarial standards) is to apply multiple methods. Each method is likely to produce a different result, although hopefully the results will converge to a range of estimates considered reasonable. The final amount recommended and/or recorded is therefore an informed selection based on the results of the various methods/models applied and the particular facts and circumstances at that particular time. Actuarial standards in various jurisdictions exist to add some discipline to the judgment that is unavoidable in such estimates.<sup>34</sup>

As mentioned above, many insurers for third-party lines will produce estimates that combine claim and allocated claim adjustment expenses. Estimates for unallocated claim adjustment expense liabilities are often estimated by applying a simple percentage to the total of claim and allocated claim adjustment expense liabilities, with minor adjustments.

Note that the final recorded amount under many accounting paradigms is a management selection, not necessarily an actuarial selection and not the result of a pre-determined formula. These management selections are informed by various actuarial estimates but frequently are not the result of a specific mathematical calculation. Many jurisdictions add an actuarial opinion to the financial statement requirements, whereby a credentialed actuary opines on the reasonableness<sup>35</sup> of the claim liability estimates recorded by management in the financial reports.

The uncertainty in the claim liability estimation process results in a need to continually re-evaluate prior estimates. It is common (and expected) for estimates to change as time goes on – in general, general insurance accounting paradigms do not “lock in” prior estimates. As a result, the normal reporting process for general insurance writers requires separate disclosure of the contribution to incurred losses from exposures in the current period versus the contribution from changes in prior period claim liability estimates. Such changes to prior period claim estimates can be material to the solvency evaluation.

Key considerations that actuaries take into account in these estimates include:

- Available data – Actuarial methods generally assume that the past repeats itself to a large degree. This dependence on prior experience requires sufficient, relevant data from the past. Where such data is sparse, the estimation risk increases. Where no data exists, experience from similar products or coverages may be helpful, but it can also be misleading.
- Quality of data – Erroneous data can cause erroneous estimates. Generally the higher the quality of the data, the higher the potential quality of the estimate.

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<sup>34</sup> As of the date of this publication, not all jurisdictions had actuarial standards. Each jurisdiction is in charge of its own standards (or lack thereof), although some actuarial associations provide guidance to their members in cases where standards do not (yet) exist.

<sup>35</sup> Note that the actuary is not required to say that such liability estimates are “adequate” or “sufficient”. The uncertainty inherent in claim liability estimates makes such a statement problematic unless a very high level of conservatism exists in the estimate. Even then, scenarios may exist that could make even a very conservative estimate a deficient amount.

- Stability of trends – Many general insurance situations involve one-offs and aberrations. (e.g., anomalous weather events or unusual court verdicts). The timing of some phenomena may also be unsteady (such as court procedures being delayed by bad weather or social unrest, thereby disrupting the normal trends in the data). Hence it may take a while before an insurer can evaluate whether an unexpected event is a sign of a new trend, or just an aberration.

Many accounting paradigms require that the claim liability estimates reflect the time value of money (i.e., be discounted). The calculation of discounted values is not a difficult exercise, but the result is not as precise a calculation as may occur in other financial contexts. This is due to the volatility in payment patterns for most general insurance claim liabilities. This volatility is normally addressed by performing the calculation on an aggregated basis only. Accepting this volatility, various actuarial methods used in the estimation of ultimate nominal amounts will also produce an approximate payment pattern.<sup>36</sup> (Granular discounting calculations are normally only performed for annuity-type claims, if at all.)

Generally, whenever an accounting paradigm requires discounting of claim liabilities, there is also a requirement for a margin or conservatism. In some cases this is addressed through the selection of a conservative discount rate. In other cases, this margin may be explicitly determined. There is a variety of approaches that may be applied, depending on the local accounting rules, all of which have at least some degree of subjectivity in their application. Examples include:

- Cost-of-capital approaches – these require some estimate of the capital required to cover claim liability uncertainty, plus the required return on that capital
- Percentile or confidence-interval approaches – these require an estimated distribution of possible claim outcomes (generally for an aggregation of claims, and not individual claims)
- Statistical approaches (such as a certain number of standard deviations) – since these rely on statistical analysis, significant amounts of historical experience are usually needed

Unfortunately none of these produce a value that can be truly back-tested.<sup>37</sup> Hence evaluation of these risk margins may be limited to assessment of whether the logic behind them is consistent, or whether they are generally comparable to what others have estimated, and not whether they are “correct” or “accurate”.

Actuaries estimating claim liabilities are continually on the alert for changes in the environment (both internal and external to the insurer) that may affect the claims data and therefore the reliability of their estimates. The only thing they know for certain is that their estimates will change.

#### 4.5 Controls around the claim liability estimate

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<sup>36</sup> As one example of this lack of precision, the estimated duration for a portfolio of claim liabilities may only be accurate to about half a year or so, with no degree of confidence that the actual duration after all claims are paid was in that estimated range.

<sup>37</sup> One reason that risk margins cannot be back tested is the dynamic claim environment. It is very unlikely that enough relevant data points can be observed from precisely the same environment to correctly parameterize any of these methods before that environment changes.

There are several ways an outside observer can evaluate the reliability of an insurer's claim liability estimates.

This is especially important given the inherent uncertainty in the general insurance claim liability estimation process, and the resulting pressures that management may feel to record values at the low end of a range of reasonable estimates produced by actuarial methods/models.

Many jurisdictions require a credentialed actuary to evaluate and opine on the reasonableness of the recorded claim liability. These opinions are typically supported by a written report and are generally provided annually to the supervisor. The liability is generally considered to be reasonable if it is within the range of reasonable estimates produced by the actuarial analysis.

Most financial reports for general insurers also require annual reporting of how reliable past estimates have been. This is generally done through a claim "development" exhibit, showing the estimated ultimate incurred claim amounts for a given cohort of claims (e.g., by accident year, policy year or underwriting year) at successive valuation dates. Insurers with reliable claim estimations will show relatively little movement in the estimates for a given cohort from one year to the next, implying that their estimates for the most recent cohorts are likely to be similarly reliable.

Insurer income statements are also required under most accounting paradigms to break out the portion of incurred claims resulting from current period events versus the contribution from changes in prior period claim liability estimates. Explanations are often provided (and even required) when such changes in estimates are material. These explanations are generally intended for non-actuarial audiences.

A further reasonableness test of claim liability estimates is examination of the loss ratios for historical cohorts (e.g., accident year, policy year, underwriting year) given the claim liability estimates.

Generally one would expect loss ratios to be relatively consistent over time, or to show trends consistent with known changes in the environment. Loss ratios for the most recent cohort that look too good relative to prior period cohorts may indicate that the claim liability estimates are too low.

## 5 Ceded reinsurance

The largest offset to general insurance liabilities is ceded reinsurance.<sup>38</sup> The use of ceded reinsurance is an essential risk management tool for nearly all general insurers, hence the importance of ceded liabilities to the evaluation of a general insurer's balance sheet. Depending on the accounting regime, ceded liabilities are accounted for as a direct offset to gross liabilities (as a contra-liability), or as an asset. Whichever accounting approach applies, many insurers focus on their liability net of reinsurance when performing risk management and evaluating their operating performance.

Many general insurance writers use ceded reinsurance to transfer the most variable or uncertain risks. Hence their liabilities gross of ceded reinsurance are more unpredictable than those net of reinsurance.

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<sup>38</sup> This term will be used in this chapter to represent both cessions of primary or direct business, and cessions of assumed reinsurance business (called "retrocessions"). To avoid confusion regarding assumed versus ceded reinsurance and assumed versus ceded retrocessions, some use the term "inward" business when referring to assumed or written business and "outward" business to refer to cessions.

As a result, some insurers focus on estimating their net liabilities first, and then estimate the gross or ceded liabilities.

Risks associated with the ceded liability estimate include estimation risk, credit risk and dispute risk.

With regard to estimation risk, the assumptions an insurer uses in determining its ceded liabilities should be consistent with the assumptions used in determining the underlying gross liabilities. For example, if an insurer has purchased a stop-loss contract covering losses over \$X million, it should not anticipate on its balance sheet a ceded recovery unless its gross liabilities reflect losses over \$X million. The ceded accounting entries should also reflect any offsetting charges that might be connected to those recoveries, such as mandatory reinstatement premiums<sup>39</sup> that may be associated with those recoveries.

Credit risk (or “counterparty” risk) arises from the potential inability of a reinsurer to honor its contracts (i.e., the potential insolvency of the reinsurer). This risk increases with the decline in the financial strength rating of a reinsurer, and the length of time until a ceded liability is to be billed. Insurers try to reduce ceded credit risk by only ceding to reinsurers rated or otherwise determined to be financially strong, with the strength criteria possibly more stringent for cessions with longer billing tails. For example, the acceptable credit quality for a reinsurer may be lower for cedes of first-party claims that will be billed not as far in the future than for cedes of third-party claims that may not result in a ceded bill for many years.

Dispute risk arises from a reinsurer’s unwillingness or hesitancy to pay amounts billed to it by cedants. This may arise from valid coverage disputes in areas not anticipated in the original contract language, from ambiguities in underlying laws, or from aggressiveness from either the cedent or the assuming party. While dispute risk may be greatest for evolving areas of claim activity and exposure, it is often reduced by the existence of prior court decisions relevant to a potential dispute.

Ceded liabilities are estimated using many of the same techniques as used for direct liabilities, although there is generally a lower volume of relevant data to aid in the estimate (thereby increasing estimation uncertainty). This reflects the common tendency to cede the less predictable claims and retain the more predictable claims. Note that “less predictable” is somewhat synonymous here with “lower frequency” and/or “higher severity”.

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<sup>39</sup> Mandatory reinstatement premiums are common for many catastrophe reinsurance contracts. They require the insured to pay an additional premium upon attachment of the first claim on the catastrophe reinsurance contract, to provide for coverage of a possible future catastrophe under the same policy. These payments are mandatory due to the lag in determining whether a catastrophe is large enough to warrant filing a claim with the reinsurer. For example, for a catastrophe reinsurance contract covering the year X, the cedent may not know until sometime in year X+1 whether the paid claims from a year X catastrophe are high enough to attach the reinsurance contract. By that time the cedent would know whether a second event occurred during year X, so they will know whether they would need to reinstate the reinsurance limit via payment of a reinstatement premium. To avoid such anti-selection, the reinsurer makes the reinstatement premium mandatory upon filing of the first claim.

## 6 Other liability offsets

There are several other categories of liability offsets. Some arise from policies or agreements (besides ceded reinsurance) that transfer risk to, or share risks with, others. These include:

- Retrospective premium adjustments – For some contracts the final policy premium is based (at least partially) on actual losses under the policy. This requires adjustments to the initial estimate of the premium that was booked at policy inception. By necessity, these adjustments are billed after the actual claim activity has occurred. Adjustments can be on a full or partial basis (i.e., adjust the premium for only a portion of the claim activity), and/or be subject to floors and caps. Any estimate of future adjustments should be consistent with the estimate of the underlying claim activity. The liability or asset for estimated future adjustments may be netted against the claim liability or treated as a separate balance sheet entry, depending on the accounting paradigm in place. (Note that for reinsurance contracts these adjustments may occur via retrospective changes to the ceding commission rather than the ceded premium.)
- Casualty deductibles – A typical property deductible does not result in a balance sheet asset or liability. The insurer is generally not involved with the claim unless the claim is for an amount over the deductible, and then is only liable for the portion above the deductible. For casualty deductibles, however, the insurer is often involved with the claim from the first dollar and bills the policyholder for the actual claim amount, up to the deductible. The accounting for these situations can vary. One approach is to record claim liabilities gross of these deductibles, with the future deductible recovery treated as an asset. Another approach is to record the claim liabilities net of these deductibles. In any event, these arrangements expose the insurer to credit risk with regard to collection of the deductibles.<sup>40</sup>
- Policyholder dividend plans – Some insurers pay dividends to their policyholders. These may be a function of the insurer's profitability; hence they may act to some degree as a shock absorber in the case of adverse experience or adverse development on prior claim estimates. These can also occur for both mutual companies and stock companies, although they are most common for mutual companies. In some accounting paradigms any estimates of future dividends are on the balance sheet, while in others any dividend liability is not recognized unless declared by the insurer's board.
- Contingent commissions – The insurer may encourage an agent or broker to provide profitable business via the use of contingent commissions. Such commissions generally result in higher levels of compensation for profitable business, but usually do not claw back previous commissions paid on (what turned out to be) unprofitable business. Hence these generally are a liability rather than an asset, although typically not a solvency concern.

Where offsets that transfer risk are material,<sup>41</sup> they should be considered when evaluating balance sheet strength. Such an evaluation will also need to consider any related credit (counterparty) risk.

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<sup>40</sup> This credit risk also exists for retrospective premium adjustments where the adjustment requires future additional premium payments from the policyholder.

<sup>41</sup> Offsets transfer risk when the size of the offset changes with the size of the item being offset. For example, a recovery from a government program that is a percentage of the claim payment will reduce the amount of risk

There are other categories of offsets that may be part of the normal claim operation and hence may be implicitly recognized within some claim liability estimates. These may include:

- **Salvage** – When an insurer declares a covered damaged property a total loss, it pays the claim and then (generally) takes ownership of the damaged property. It can then sell that property for any residual value to recover some of the cost of the claim. Examples include the scrap value of a car after a collision, and goods damaged in a warehouse fire. This salvage value may be embedded in the estimate of the claim liability or may be treated as a separate asset.
- **Subrogation** – When a paid claim is the result of a third party’s negligence or fault, an insurer typically has rights to pursue the at-fault party for reimbursement. This is called “subrogation” and can occur for both first- and third-party claims.<sup>42</sup> Subrogation generally involves some form of legal process, which can be very adversarial; hence there can be a significant lag in such recoveries. This lag can cause payment patterns for claims net of such recoveries to be negative in the later years. At times the estimate for such recoveries can be material to an insurer’s solvency, although this is not common. It is common for such recoveries to be embedded in the claim liability estimates, rather than being treated as a separate asset.
- **Government programs** – In some jurisdictions there are special provisions for certain types of claims whereby a government program takes over the financial responsibility (and the risk) for those particular claims. One example is catastrophic medical claims arising from auto accidents in the U.S. state of Michigan, whereby the government program reimburses an insurer for amounts over a set limit for each claim.<sup>43</sup> These programs sometimes follow reinsurance accounting, with the government program acting as a reinsurer, but not always. For some programs these reimbursements are handled as miscellaneous offsets to individual claims. Consideration should be given as to the materiality and accounting treatment of such programs should they exist.

## 7 Premium receivables

Not all insurance premiums are collected up-front. Where the premium is not collected up-front (such as due to instalment billing) an insurer will have a receivable for premiums, which can either be a separate asset or netted against insurance liabilities (typically against policy reserves for life insurance and against premium liabilities for general insurance). In addition, premium collection may be the

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from an uncertain future claim payment. If the claim payment is larger, the recovery will be larger. This risk reduction may not be apparent from a quick review of the balance sheet, as that balance sheet will only show the current expected recovery given the current expected claim payment.

<sup>42</sup> Examples include:

- A contractor doing work on a building inadvertently starts a fire that burns down the building. The building’s insurer pays the claim, then subrogates against the contractor for the amount of that claim.
- While driving home from having their car serviced, a driver gets into an accident due to a problem with a brake repair. The driver’s insurer pays the claim of the other driver (hit by its insured), then subrogates against the repair shop for the amount of the claim.

<sup>43</sup> In this program, medical benefits from auto accidents are unlimited. The auto insurer pays the full amount of any claim, with payments over \$550,000 (as of 2017) for a particular claim reimbursed by the state program.

responsibility of an intermediary such as an insurance agent or broker, such that the counterparty for this receivable asset is the intermediary rather than the policyholder.

This receivable contains some credit risk, although the extent of that risk is mitigated to the extent that the premium receivable is for future coverage as opposed to past coverage. Unpaid premiums that are written off as bad debt can be netted against the remaining unearned premium liability, cancelling the remaining portion of the premium. Hence the premium receivable credit risk is limited to the portion of the policy that has already been “earned” and cannot be cancelled due to premium non-payment.

## 8 Miscellaneous (insurance-related) liabilities

The above sections discussed the most significant liabilities (and associated assets) arising out of general insurance contracts. While generally less significant from a solvency perspective, other insurance-related liabilities include:

- Miscellaneous underwriting expense liabilities – such as accrued but not yet paid salaries and commissions.
- Funds withheld on reinsurance contracts – under certain ceded reinsurance contracts some of the ceded premium is retained by the cedent. These deposit-like liabilities generally accrue interest to the benefit of the assuming reinsurer, and are typically the first resource utilized for ceded paid claims.
- Other miscellaneous deposits – such as for prepaid premiums under accounting paradigms that do not recognize contracts until they become effective.
- Taxes and assessments – including in some cases residual market assessments.<sup>44</sup>
- Catastrophe or equalization reserves – These exist, or did exist,<sup>45</sup> under some accounting paradigms in recognition of risk-spreading across calendar years. For example, in some jurisdictions with earthquake risk, the general insurance writers were required to set up catastrophe reserves during years without catastrophes so that they would have enough funds to pay their claims during those years when catastrophes did occur. Most accounting paradigms now treat such liabilities as a segment of capital and not as a true liability.
- Contingency reserves – For certain products (e.g., financial guarantee), in some jurisdictions, an insurer is required to hold back a portion of the premium (or the equivalent amount based on a percentage of the insured risk) at contract inception, releasing this amount on a gradual basis as the contract matures.

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<sup>44</sup> Residual markets are mechanisms set up to provide insurance protection for those unable to find a willing provider in the market. They can have several different forms, including reinsurance pools whereby those in the insurance industry share the results of these “residual” (also sometimes called “involuntary”) risks, or a separate entity created to provide insurance to those residual risks and funded via assessments on the insurance industry.

<sup>45</sup> Those following IFRS that were establishing liabilities for future catastrophes were required to eliminate that practice under IFRS 4.

## 9 Industry segment liability estimation issues and risks

The most material risks and liability estimation issues generally vary by industry segment. The major issues for certain of these segments are discussed below.

### 9.1 Personal lines

The major products for personal lines are motor/auto and homeowners'/residential property coverages. These products generally give rise to claims that are reported faster and paid more quickly than their corresponding commercial lines products, with the major claim liability being personal motor/auto third-party liability. The major risks besides estimation of this liability are pricing risks and the risk of future catastrophes. Note that catastrophe risk is generally a risk to future income statements and balance sheets, and not a current balance sheet risk.<sup>46</sup>

### 9.2 Commercial lines

In contrast, commercial lines generally have longer payouts and more potential for drawn-out litigation. They also tend to have greater exposure to mass torts<sup>47</sup> (e.g., latent liabilities) and events that may not be inherent in the historical data. Product lines that represent the most significant balance sheet risk include commercial liability, products liability, employers' liability/workers' compensation<sup>48</sup> and commercial motor/auto liability. Catastrophe risks do exist for commercial property insurance, but as for personal lines this is a risk to future income statements and balance sheets and not generally a current balance sheet risk.

### 9.3 Excess and specialty lines

Coverage for higher layers of loss and for specialty lines tends to have greater uncertainty, partly due to greater exposure to low-frequency/high-severity claims. For these lines, the estimation uncertainty may be exacerbated due to lower volumes of relevant data and more exposure to changing environments. (The more established an environment or product, the more likely it is to be written in the traditional market with traditional products.)

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<sup>46</sup> Some mistakenly focus on the current balance sheet's unearned premium liability as the main determinant of the size of this risk. This can be extremely misleading. For example, a company that insures 100,000 homes in a catastrophe-prone area will have the same risk whether it writes those policies with annual, semi-annual, or monthly policy terms, yet the balance sheet premium liability would be very different under those three scenarios.

<sup>47</sup> Tort liability is also known as "civil liability" and may have different names in different jurisdictions (e.g., the "law of delict" in South Africa). Mass torts are claims of civil liability from the same action or causative agent coming from multiple parties. A common example of a mass tort is asbestos, whereby multiple plaintiffs file claims against one or many defendants, alleging injury from asbestos exposure.

<sup>48</sup> Workers' compensation covers many of the same hazards as employers' liability, but the risk dynamics can be very different. Workers' compensation systems are generally designed to avoid the tort system, trading off the potential for a huge windfall in the event of a victorious lawsuit at some point in the future for immediate, guaranteed reimbursement of medical expenses and lost wages, in the event of a workplace injury. As a result, the payments are more spread out and the risk mitigated, but the cost may be somewhat higher for the employer



## **9.4 Reinsurance**

Many analysis tools for primary insurers may not be as useful for reinsurers for a variety of reasons. Since reinsurers tend to have far fewer contracts than primary writers, they have the potential for a significant concentration of risk with regard to contracts. They also tend to be farther removed from the underlying risk. As a result, their data may not be of the same volume or quality as a primary writer. On the other hand, unlike some primary writers, reinsurers may have greater geographical spread of risk, somewhat offsetting their greater concentration risks with regard to contracts.





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