NOVEMBER 2023

Practical Methods for Management to Evaluate Actuarial Loss Reserves

JohnsonLambert cpas + consultants | PINNACLE ACTUARIAL RESOURCES

Executive Summary

As inflation continues to impact the economy, insurance companies face ongoing challenges of volatility in their investment portfolios along with higher operating costs and claim payouts. The process of estimating the liabilities for unpaid claims, often the largest liability on a property/casualty insurance company's balance sheet, becomes even more complex with these changing variables. The results of the actuarial loss reserve analysis can have a substantial impact on an insurance company's financial condition.

In addition, auditing standards have evolved in keeping with the times. Two new auditing standards are effective in 2023, placing a renewed emphasis on the loss reserve estimate and the use of an actuarial specialist. The following discussion may be used as a guide for management to understand the actuarial estimates and what methods and assumptions cause greater variability in the reserving process, and as such are more likely to be subject to further evaluation by auditors.

WRITTEN BY:

Lauren Darr, CPA
Partner
Johnson Lambert

Carrie Rice, CPA
Partner
Johnson Lambert

Erich Brandt, FCAS, MAAA
Senior Consulting Actuary
Pinnacle Actuarial Resources

Darcie Truttmann, FCAS, MAAA
Senior Consulting Actuary
Pinnacle Actuarial Resources

CONTENTS

Background

The American Institute of Certified Public Accountants (AICPA) released Statements on Auditing Standards (SAS) updates applicable to audits of financial statements for periods ending on or after December 15, 2023, including but not limited to:

- *SAS 143 – Auditing Accounting Estimates and Related Disclosures*

  Prescribes a risk assessment process over accounting estimates and testing approaches in response to the assessed risk, including consideration of when the auditor might need to use the work of a specialist.

- *SAS 144 – Amendments to AU-C Sections 501, 540, and 620 Related to the Use of Specialists and the Use of Pricing Information Obtained from External Information Sources*

  Provides clarification on the use of a specialist, whether it is management's specialist or the auditor's specialist.

Specifically, SAS 143 enhances the language around estimates to convey that, even when management uses a specialist, it is management's responsibility to: (a) determine the methods, assumptions and data sources needed for the estimate, and when changes are needed to these items, (b) understand the degree of estimation uncertainty, by considering the range of possible outcomes, and (c) address estimation uncertainty, including selecting a point estimate and related financial statement disclosures.

This discussion paper illustrates the intersection of the estimate for unpaid claims and the new auditing standards with practical takeaways for management.

An Actuary's Consideration of Methods and Assumptions

Understanding the key assumptions going into the methods that are used to estimate the unpaid claim liabilities is essential to understanding the overall results of the actuarial analysis.

Loss development patterns are one of the key assumptions that play a large role in many of the common methods used in an analysis. Loss development patterns can be developed using the actual loss data by line of business. However, when the loss data is not of sufficient volume to be fully reliable (i.e., credible), benchmark loss development patterns are often used to supplement the calculation of estimated unpaid claim liabilities. Benchmark loss development patterns are selected based on information provided by management to the actuary about the underlying exposure for each block of business. Selecting benchmarks based on publicly available data that reflect the nature of the exposure is vital to correctly estimating ultimate losses.

Similarly, expected **loss ratio assumptions** may be based on emerging losses or benchmarks. Loss ratio assumptions could also consider information provided by management, such as rates charged to policyholders and rate change information. The expected loss ratios are often used to develop "**a priori**" **expected losses**, that is, the initial loss expectation before the policy is written (prior to any loss emergence).

The assumptions listed above, while not an all-inclusive list, are key assumptions needed in the most common methods used by the actuary to estimate the unpaid claim liabilities in the analysis. Common methods include:

- Loss Development Methods
- Expected Loss Methods
- Bornhuetter-Ferguson Methods
- Counts and Averages Methods

Certain circumstances may require other methods based on unique assumptions or actuarial literature to best predict the ultimate losses for a specific block of business. An example of when additional methods could be considered is when there are changes to the case reserving practices used by management. Documentation of the methods will be included in the actuarial report that supports the actuary's analysis.

The actuary preparing the reserve analysis should carefully document the method(s) and support the underlying assumptions in the actuarial report. Methodologies that are more unusual or rely on unique assumptions often have extended commentary. The report should also include the actuary's reason for using the methodology and discuss its strengths and limitations.

The actuary uses a variety of considerations to select reasonable assumptions and methods in the actuarial analysis. Clear communication between the actuary and management to fully understand the exposures is essential to producing the most accurate estimates of unpaid losses. Additional considerations include:

- Unusual claim activity,
- Ceded reinsurance, and
- Exposure to catastrophes.

In addition, management and the actuary should consider how benchmark data may be used in the analysis and if there is enough data available to use the common development methods. For example, loss development assumptions for new companies and emerging lines of business may require a greater reliance on benchmarks due to the absence of credible historical loss data. On the other hand, it may be difficult to find industry benchmark loss development patterns for unique exposures that accurately portray future loss emergence. In this case, exposure-based methods (i.e., the expected loss method) may provide more reliable results.

The methodologies and assumptions should be appraised at successive evaluation dates to determine if they're still appropriate. For example, the analysis might begin to use company-specific data on a "new" line of business after several years. There may also be changes in economic conditions such as inflation that require the actuary to adjust the underlying assumptions.

A Discussion on Data

The data provided to an actuary to estimate unpaid claim liabilities can be separated into numerical data and qualitative data. Below are a few common data elements that are provided to actuaries:

NUMERICAL DATA

- Paid losses and case reserves by line of business and policy period consistent with the financial statements (throughout the document, the term "losses" shall mean the combination of both losses and defense costs)
- Premium and exposures by line of business and policy period consistent with the financial statements
- Reported and closed claim counts

QUALITATIVE DATA

- Retentions by line of business by year
- Detail regarding coverages or claims deserving special treatment in the analysis
- Details related to the company's reinsurance programs
- Support for expected loss ratio assumptions
- Rate-change information

The preceding paragraph is not intended to be an exhaustive list of data items. Management should communicate material facts to the actuary that could impact the actuarial analysis. For example, a company may have a practice to use data at an earlier evaluation date than the financial statement date. The ultimate unpaid claims are then rolled forward to year-end. This allows management to close their books shortly after year-end.

Management or the actuary may separate the data into sub-lines or business segments such as by state of operation or by agency program for a large book of business. Another common delineation is to separate lines such as general liability into specific segments, for example liquor liability, professional liability, or publishers' liability.

Management may provide the actuary with details of the company's underwriting philosophy and risk control programs. This information is especially important for programs that are new or involve emerging lines, programs that are small in size, or programs that factor this information into the loss ratio and loss development assumptions.

It is not unusual, and required in many instances, for the actuary and/or auditors to send letters to each other and management outlining required data, desired level of detail of the data and specified evaluation dates. The auditor may often use the actuary's report as audit evidence to support the reasonableness of management's selected loss reserve point estimate.

Supporting Management's Selected Point Estimate

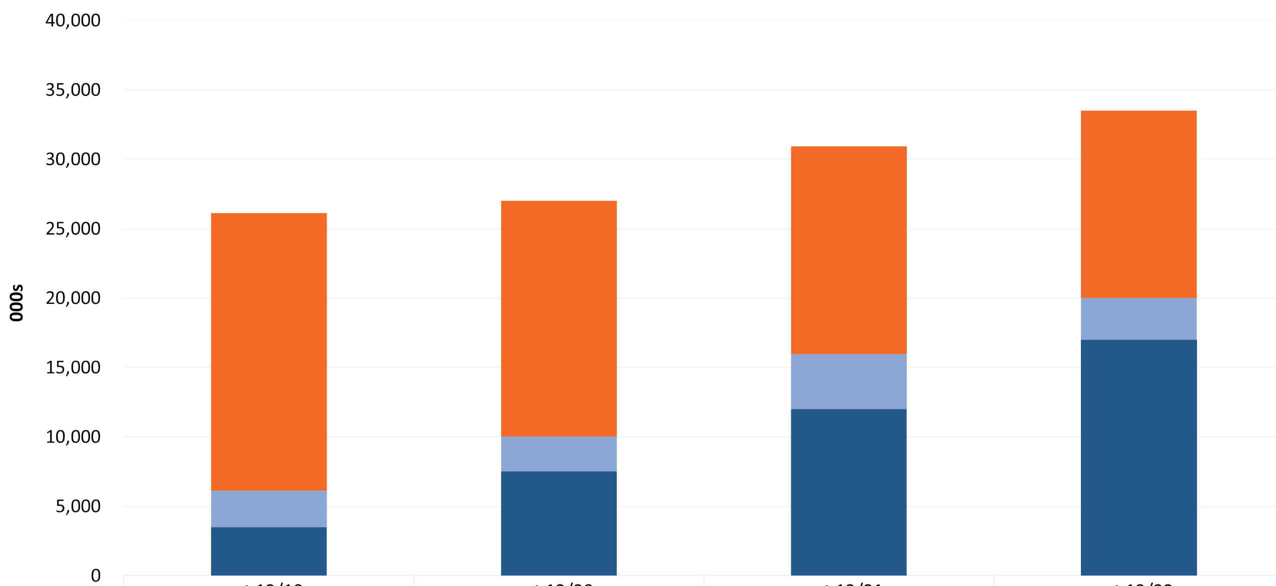
The recorded reserves for unpaid claims on an insurance company's financial statements are set by management. An actuarial report documenting the estimation of unpaid claim liabilities is produced that reflects either a point estimate or a range of indicated reserves based on the selected methods, assumptions, and data used.

A company's recorded reserves are management's best estimate and may not necessarily equal the point estimate or the midpoint of a range of estimates from an actuarial analysis. The actuarial analysis is a consideration management should use when booking reserves. A company's booked reserves may be above the actuary's midpoint or point estimate if management's concerns about reserve variability lead them to book a more conservative position. In other cases, management of companies that have high quality data in established lines of business may feel comfortable recording reserves near the actuary's midpoint or point estimate.

The following is a non-exhaustive summary of characteristics related to a company's profile that management may consider when determining the accrual for unpaid claim liabilities.

History of Adverse Development – How have ultimate loss and indicated reserve estimates by line and policy period changed between successive data evaluations? Are loss estimates consistently being increased due to under-estimation or the other way around? An exhibit comparing paid losses, case reserves, ultimate held losses and IBNR* segmented by year and line, as shown below, is a useful exhibit to assess how loss reserves have historically behaved.

SAMPLE COMPANY
COMPONENTS OF ULTIMATE LOSSES
2019 POLICY PERIOD



	at 12/19	at 12/20	at 12/21	at 12/22
IBNR	20,000	16,974	14,972	13,500
Case	2,643	2,526	3,963	3,000
Paid	3,500	7,500	12,000	17,000

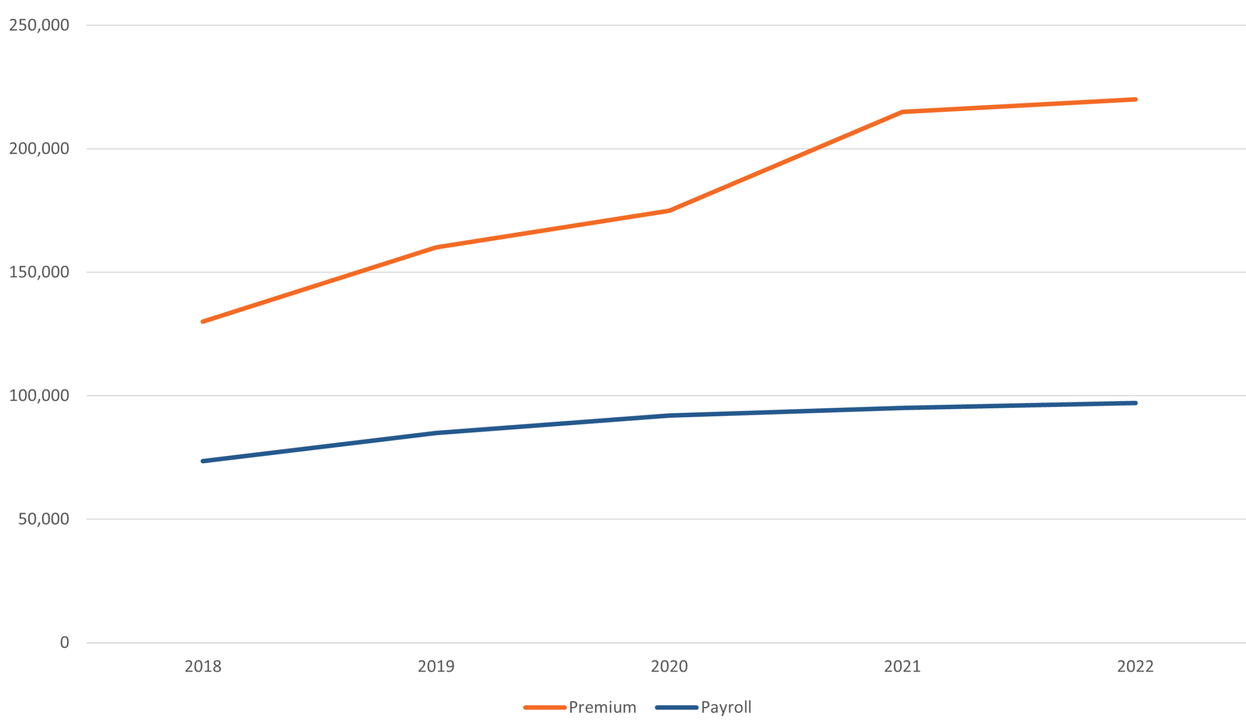
Evaluation Date

**IBNR (Incurred But Not Reported) – An amount, in addition to case reserves, booked on financial statements as part of an unpaid claim accrual.*

Expected versus Actual Loss Development – An exhibit showing expected versus actual loss development between reserve analyses can be a handy tool to gauge historical reserve accuracy. It can also help explain changes to the underlying assumptions (loss development factors or loss ratios) in a loss reserve analysis. Management will want to note specific lines or accident years that have loss development over the past year that is materially above or below what was expected.

Premium Growth versus Exposure Growth – Generally, an actuary would expect premium growth to coincide with exposure growth. However, as shown in the table below, there are times when premium growth exceeds exposure growth or the other way around. Understanding the factors that can cause premium growth to exceed exposure growth (or vice versa) is essential to understanding the underlying risks. Possible factors that could cause this phenomenon include: rate changes, increasing reinsurance costs, inflation, changes in the regulatory environment, and changes in company risk appetite. Management may also consider if the premium or exposure growth is due to expansion into new segments of business.

PREMIUM EXPOSURE AND GROWTH



Entry and/or Exit into New Lines or Business Segments – Lines of business currently underwritten by a company are generally staffed with expertise. When entering a new line of business, the staff may be inexperienced working with the new coverage. Care must also be taken when exiting a line of business. Does the company still have enough qualified staff to adequately set case reserves and manage the claims to settlement? Did the company exit the line of business due to adverse development? A similar philosophy can be applied to entry/exit situations in particular states, brokerage arrangements or sublines.

Impact of Catastrophic or Limits Claims – The impact of catastrophes can often add uncertainty to reserve estimates. One of the most visible illustrations of this phenomenon is hurricanes that strike populated areas in late summer or early fall. Loss estimates for these storms as of December 31 still have significant uncertainty. In addition to estimating the probable settlement value, management may also elect to consider the impact of the maximum retained loss from any one event. Often, this is measured as a percentage of surplus or held reserves.

Use of Benchmarks – When using benchmarks to develop reserve estimates, management should consider the additional associated uncertainty. Is the benchmark a stable and appropriate measure from a reliable source? Does the benchmark relate to a line that is new or has sparse data? While benchmarks are a useful tool to estimate unpaid claims, they may not always accurately portray the loss development potential of the underlying risk.

Reinsurance Contracts – Actuaries and management may not always see eye to eye on the ultimate amounts of reinsurance recoverable from given events or contracts. Management should discuss and document these differences when arriving at recorded reserves.

Loss Ratios and Rate Changes – Do the loss ratios, after considering unpaid claims, appear to be unusually low or high given the company's expense structure, underwriting philosophy and current market conditions associated with that particular business segment? If loss ratios are consistent between years but there have been material rate changes, management should consider whether the unpaid claims should be adjusted to reflect the rate changes. For example, if rates are decreasing, all else being equal, we would expect booked loss ratios to increase for that line of business.

Market Concentration Between Lines and States – Companies that underwrite multiple lines of business and/or underwrite in multiple states may have the advantage of diversifying their risk. Management should consider how diverse their book of business is when selecting the reserve estimate. A non-diverse book of business has much more exposure to variability from state-specific or line-specific trends or judicial decisions. A good example of this would be a company specializing in underwriting Florida homeowners risks.

Once management has reviewed the unpaid claim estimates and considered the company's characteristics that relate to recorded reserves, management will select a point estimate of unpaid claims. The recorded reserves should reflect the company's philosophy regarding the uncertainty of the reserves in their book of business and its risk appetite related to reserve deviation. These should be considered both in terms of nominal amounts and reserves relative to surplus.

An Auditor's Perspective on the Reserve Estimate

The auditor is required to evaluate the evidence provided by management and determine whether the loss reserve estimate and related disclosures are reasonable in the context of the applicable financial reporting framework, most commonly Generally Accepted Accounting Principles (GAAP) or Statutory Accounting Principles (SAP), which is a regulatory basis of accounting.

SAS 143 prescribes the auditor must use one or more of the following methods of testing estimates:

1. Obtaining evidence from events occurring up to the date of the auditor's report
2. Testing how management made the accounting estimate
3. Developing an auditor's point estimate or range

A common approach is to test how management made the reserve estimate. The auditor is required to understand the selection and application of methods, assumptions and data used to make the loss reserve estimate and how management selected the point estimate. The auditor must test the data used to make the loss reserve estimate, which includes paid claims and case reserve data by line and by accident year.

When management records reserves at the actuary's midpoint or point estimate, the actuarial report typically provides audit evidence supporting the methods and assumptions used by management. The auditor will then evaluate the appropriateness of the methods and assumptions used by management and understand the controls in place at the company that are used to develop the estimate.

Management should expect to provide additional documentation when the selected point estimate is different from the actuary's midpoint or point estimate, but still within the actuary's range of reasonable estimates. In these cases, the auditor must understand what is driving the variances and whether the assumptions that management used are appropriate and consistent with other audit evidence, external factors, and industry data. A sample management memo supporting the selected point estimate is included as Illustration A to this white paper.

Consistency is a key point when considering management's selection of a point estimate and whether judgments made give rise to management bias. If management is consistently 3-5% above the actuary's point estimate or midpoint, the auditor will expect to see that consistency annually or understand what changes are driving the deviations from management's established practice.

Risk factors that could prompt the auditor to go a step further and use its own actuary to develop a point estimate or range include but are not limited to:

- The auditor's retrospective review of the prior year reserve estimate indicates that management's current process is not expected to be effective, for example a history of adverse development,
- Management's internal controls over the reserve estimation process are not properly designed or implemented, or
- Management is experiencing low surplus and is under pressure to produce or achieve a desired result.

Conclusion

While the auditing standards newly effective in 2023 place a renewed emphasis on management's selection of a point estimate and use of an actuarial specialist, the foundation on which the reserve estimate is based remains unchanged. Management, with the support of its actuarial specialist, is expected to monitor the economy, the industry in which the company operates, and loss trends for changes and adjust relevant inputs to methods and assumptions as needed to be responsive to the changes. When markets and economies experience significant changes, this can create more volatility, or uncertainty, in the reserve estimate.

Management is expected to take an active role to understand the methods, assumptions, and data used to develop the loss reserve estimate, even when an actuarial specialist is used. Management should communicate in a timely manner to both the actuary and the auditor material changes in the business that will impact the actuarial estimate and / or the auditor's testing approach. Upon completion of the company's loss reserve analysis, management should consider the presence (or absence) of factors that may cause uncertainty as they book their estimate.

Clear and proactive communication between management, the actuary, and the auditor is the best way for management to reduce or eliminate year-end surprises related to reserves.

ABOUT JOHNSON LAMBERT LLP

Lauren Darr, CPA
Partner
Johnson Lambert

Carrie Rice, CPA
Partner
Johnson Lambert

Lauren Darr and Carrie Rice are affiliated with Johnson Lambert LLP. Johnson Lambert LLP is one of the nation's largest insurance-focused CPA and consulting firms, ranking as the 5th largest property and casualty auditor and the 7th largest life insurance auditor, according to A.M. Best's "Top Audit and Actuarial Firms", as featured in the December 2022 edition of Best's Review. For 35+ years, we have focused on providing audit, tax, and advisory services to a nationwide client base, which today includes 500+ insurance entity clients. We also serve nonprofit organizations and employee benefit plans. Johnson Lambert is an independent member of DFK International/ USA, a worldwide association of independent accounting and management consulting firms. For more information on our firm, please visit JohnsonLambert.com.

ABOUT PINNACLE ACTUARIAL RESOURCES

Erich Brandt, FCAS, MAAA
Senior Consulting Actuary
Pinnacle Actuarial Resources

Darcie Truttmann, FCAS, MAAA
Senior Consulting Actuary
Pinnacle Actuarial Resources

Erich Brandt and Darcie Truttmann are affiliated with Pinnacle Actuarial Resources, Inc. Pinnacle is an independent, full-service actuarial firm focused on the property and casualty insurance industry. With a home office in Bloomington, Ill., the firm also has offices in Atlanta, Chicago and San Francisco. Pinnacle is owned by its professional staff and ranks among the largest independent property/casualty actuarial firms in the United States. To learn about Pinnacle's Commitment Beyond Numbers, please visit www.pinnacleactuaries.com.

MEMORANDUM TO FILE
Sample Insurance LTD.
December 31, 2023 IBNR Reserves – Management Estimate

From: Company Management
Date: January 25, 2024

General:

Actuarial results are statistical estimates based upon historical experience. Management's best estimate is based upon these actuarial estimates, but such estimates assume past experience, adjusted for current developments, anticipated trends, and industry norms, are appropriate for predicting the future.

The company's actuary performs an actuarial study using loss development triangles and provides a range of reasonable estimates for management to record their best estimate. Although this range reflects the most likely scenarios; it is possible that the final outcome may fall above or below the estimated range.

Management has adopted a reserving policy which incorporates several key criteria in addition to factors noted by the actuary such as:

1. Premium growth
2. Geographic/ industry concentrations
3. New line(s) of business underwritten
4. Loss development

These factors are often reflected in the actuarial triangles for some period of time.

We note the particular issues affecting the company including the following:

1. The company writes 80% of its premium in the workers' compensation (WC) line of business. Premium has grown from about $10 million of direct written premium (DWP) in the 2018 accident year to over $25 million of DWP in the 2023 accident year.
2. The company writes 50% of its WC premium in one state (Pennsylvania) which exposes the company to significant judicial and regulatory risk. The remainder of the WC premium is spread across 6 other states.
3. In 2023 the company began to write general liability. The DWP for 2023 for this line of business is $5 million and has limits of $500,000 per occurrence.
4. The company had $11.7 million of reported incurred loss development in the past 12 months for the 2022 and prior accident years which was above the $9.6 million of expected loss development. Accordingly, the actuary increased their ultimate loss selections at both ends of the range since last year's evaluation.

Conclusion:

Based upon the factors outlined above, management selected a point above the midpoint of the actuary's range when establishing its best estimate.