

# The Gold Standard

Assessment of the property-casualty  
actuarial reserving process  
July 2010



# Introduction

Pursuant to the Sarbanes-Oxley Act of 2002, publicly-held property and casualty insurance companies are required to have processes and controls surrounding their actuarial reserving process – the estimating and recording of unpaid losses and loss expenses. US statutory reporting will likely have a similar requirement in the near future. Over the past several years, some companies have taken great strides toward establishing a well-controlled environment, while others have elected to establish the minimum level of controls to accomplish the requirements for management's Section 302 and Section 404 certifications and receive an unqualified audit opinion.

There are significant advantages to insurers having a strong control environment and a "best practices" reserving process. Loss reserves are the largest liability and the most volatile item on a property/casualty insurance company's balance sheet. Therefore, a reserving process functioning at an optimal level has strong internal controls with few or no deficiencies, reduced risk of reserve misstatement, high-quality documentation of the actuarial analysis, and appropriate management support for the recorded amounts. These factors result in a more effective and efficient external audit and significantly reduce the likelihood of issues arising from the audit of the recorded amounts or testing of internal controls. The benefits go beyond financial reporting, as a strong control environment allows senior management and the audit committee to make better-informed company decisions regarding underwriting, capital allocation, and other business decisions. Although some companies have a general sense of opportunities to improve upon current practices, few companies have systematically studied the whole actuarial reserving process to honestly and objectively assess current practices in relation to an ideal, best-practices reserving process, i.e., the Gold Standard.<sup>1</sup>

## **What is the Gold Standard when it comes to P/C reserving?**

At PwC, we have experience dealing with many types of companies, including large multinational insurance and reinsurance companies. Based on our experiences with these companies and the information we have gathered from companies regarding corporate governance of the loss reserving process, we have developed a framework of key principles that exemplify a Gold Standard reserving process. We consider the key elements of this framework to be consistent with a best-practices reserving model. For the most part, for each of the key elements described, the Gold Standard is consistent in principle with the actual practice we have observed at one or more companies that operate at or near an optimal level. However, for certain elements of the reserving process, we are unaware of companies operating at a gold-standard level. Consequently, we developed what we believe to be a Gold Standard from a financial reporting perspective, based on our collective judgment and the overarching goal of having a reserving process that operates optimally.

While the Gold Standard described in this document is based upon observed or desired practice for larger insurance and reinsurance companies, the principles involved also apply to smaller insurers and many self-insurers. By referring to the principles that underlie the Gold Standard Framework, smaller insurers and self-insurers can identify opportunities to improve their current processes and practices.

<sup>1</sup> The Gold Standard Framework described in this document is not designed to be an assessment of controls and/or a template for controls testing under an integrated audit.

### Using the Gold Standard Framework

Performing an unbiased and objective assessment of the company's reserving process and communicating the result of this assessment to management and the audit committee are simply the first steps of utilizing the Gold Standard Framework. The Gold Standard Framework can be used by a company, along with a PwC actuarial specialist, to determine areas of strengths and opportunities to enhance the company's reserving process relative to the Gold Standard. The company can then leverage the associated feedback to identify specific opportunities to improve current processes and develop appropriate action plans to achieve its goals.

As a reviewer of many companies, PwC can provide input on what a Gold Standard reserving process looks like in practice and how the company can take steps to achieve it.

### Suggested path forward

To use this tool, we suggest following this approach:

- Develop an understanding of the Gold Standard Framework by reading this document; a PwC actuarial specialist is available to assist by answering questions and/or providing a brief presentation.
- Identify the reserving processes to be evaluated and compare them to the Gold Standard. For many large, multinational property and casualty insurance companies, there may be separate processes for each GAAP reporting segment and, in some instances, there may be multiple processes within a segment. Each individual reserving process should be evaluated and compared to the Gold Standard separately.
- A PwC actuarial specialist, working closely with key management resources, assesses the company's current reserving process in comparison to the Gold Standard to identify areas of strengths and opportunities to enhance existing processes. Each of the identified opportunities, in particular, is discussed with management so that management understands the differences between the best practice and the existing process.
- A brainstorming session—led by the PwC actuarial specialist and including key members of management as appropriate—is then held to determine how the company can improve and the most feasible ways for the company to establish a plan to accomplish its goals. Additional possible next steps are the following:
  - An exchange of views with actuarial department management
  - An exchange of views with non-actuarial management
  - Discussion with and/or presentation to the audit committee
- At future points, perhaps annually, the Gold Standard Framework and the company's prior assessment should be revisited to assess results, measure progress, and develop an updated approach depending on the results.



# Gold Standard— The key elements

For purposes of describing a Gold Standard, we have organized our description of best practices and assessment of a loss reserving process into seven elements:

1. Management and board involvement
2. Actuarial staffing and expertise
3. Data quality and reliability
4. General reserving approach and methodology
5. Documentation of reserving process
6. Use of external actuaries
7. Financial statement disclosures

A summarized description of each of these key elements is contained in the following sections. These descriptions comprise the Gold Standard Framework against which a company is assessed and should be used as a guide when assessing the company in each of the areas.

## 1. Management and board involvement

Gold-standard companies have senior management and audit committees that are strongly committed to the financial reporting and loss reserving processes. Management's commitment is demonstrated by prioritizing and committing necessary resources to the reserving process (e.g., personnel and computer systems); minimizing potential conflicts of interest; understanding the reserving approaches, methods, and key assumptions; challenging the assumptions and methodologies as warranted; and proactively monitoring changes in reserve estimates on a regular basis through internal management

reporting. The audit committee actively oversees the reserve-setting process by monitoring and evaluating the policies and principles surrounding reserve setting, the internal controls around reserves, and the effectiveness of related disclosures. In this oversight role, the audit committee meets regularly with internal actuaries, external actuaries, and the external auditors.

## 2. Actuarial staffing and expertise

With regard to the internal actuarial function, gold-standard companies have the following qualities:

- Appropriately credentialed professionals (e.g., members of the Casualty Actuarial Society and American Academy of Actuaries) adhere to continuing education requirements. The actuarial staff is encouraged to participate in relevant professional meetings and seminars, and a program supporting professional advancement (e.g., actuarial student program) exists.
- Staffing levels are of sufficient quantity and quality to allow for comprehensive and timely review of the relevant reserving components; duties are segregated such that separate individuals are responsible for the primary analysis function, technical review, and supervisor peer review.
- Reserving personnel are independent of those responsible for underwriting and pricing the business; nevertheless, the reserving process takes account of key metrics evaluated in the pricing department (e.g., pricing or rate monitor, expected loss ratios, and trends).

- The chief actuary takes ownership and is individually responsible for the internal actuarial estimate for all reserves, even difficult-to-estimate liabilities such as those from asbestos and environmental claims. The lead actuary compiles appropriate summary schedules (e.g., reserves by grouping, loss-ratio analytics, IBNR-to-case ratios, and runoff/accuracy of prior estimates) into an internal actuarial package to be presented to a reserving committee.
  - The chief actuary presents the internal actuarial package to a reserving committee or the equivalent management group on a quarterly basis or more frequently. Such a committee includes key members of senior management in the company, and it is collectively responsible for determining reserve levels. The conclusions are then documented and executed—see element 5 on Documentation of Reserving Process below.
  - Inefficiencies from staffing turnover in the actuarial department are minimized by the well-organized, executed, and documented reserving process.
  - Computer systems are capable of capturing data in the sufficient quality and detail needed for actuarial review. While highly complex and/or unusual claims and/or coverages present a greater challenge in this regard, the difficulty in estimating liabilities for such claims makes this capability that much more important.
  - Manual processing, which is subject to backlogs and higher error rates, is minimal or nonexistent. Where manual processing is necessary, adequately documented and controlled procedures are in place to ensure timeliness, accuracy, and completeness.
  - The data for actuarial analysis are available in a timely manner for actuarial review and management consideration in the current period's financial results.
  - MGA and TPA interfaces are well controlled and regularly monitored to ensure that data is properly incorporated into the actuarial review process.
  - As needed, computer systems permit functional currencies to be accurately recorded and translated at historical or constant exchange rates, as appropriate, for aggregation with other data for actuarial analysis.
- ### 3. Data quality and reliability

With regard to actuarial data, there are several consistent themes among companies that have best practices:

- Loss, premium, and other actuarial data are usable for estimation purposes as they are captured and contained in the company's systems; this allows for straightforward and relatively easy reconciliation to the actuarial data and from the actuarial analysis to information published in financial statements.

In summary, a company following the Gold Standard has system-generated data directly usable in the actuarial estimation process, and such data is captured in the detail necessary for an actuary to apply a wide variety of actuarial methods.

#### 4. General reserving approach and methodology

The general reserving approach and methodology involves a number of issues such as the frequency of reviews, gross/ceded/net analyses, reasonableness checks, the use of software, and the assumptions and methodologies employed in estimating the reserves.

With regard to frequency of actuarial evaluation, there are several key themes underlying the practices of gold-standard companies:

- For SEC registrants, the reserve evaluation process is performed and finalized quarterly, consistent with public reporting requirements, in a timely manner before final decisions are made as to reserve and other reported amounts.
- For traditional claims (i.e., those which lend themselves to common actuarial methods), full reviews are completed each quarter using data evaluated as of the quarter-ending date (i.e., not on a quarterly lag). In cases where the size and/or complexity of the amounts prohibit a comprehensive review in this time frame, reserve reviews are completed with a one quarter lag. Such reviews are coupled with rigorous actual-versus-expected analyses for the most recent quarter.
- For non-traditional claims, such as asbestos, pollution, or other complex exposures, full reviews are completed once per year, with key monitoring statistics considered during the quarterly reporting process.

Gold-standard companies have the same rigor of analyses for the reserves prepared gross of reinsurance as they do on a net of reinsurance basis. Further, gross and net analyses, or another combination such as gross

and ceded analyses, are prepared concurrently and the results compared to one another for reasonableness. The impact of other financial statement items with associated actuarially determined amounts (e.g., reinsurance recoverables, adjustable ceding commissions, and additional premiums) are also considered at this point in the process.

Where a portion of reserves are discounted for time value of money, the key approaches and assumptions used to calculate such discounted amounts are consistent with the actuarial analysis underlying the selection of the ultimate undiscounted amounts.

Standard outputs from the reserving process include reasonability checks and analytical or diagnostic metrics, some of which are “traditional” to actuarial work, while others may be popular in financial reporting or investor analyst research. Typical actuarial analytics may include ranges, changes in ultimate losses between analyses, evaluation of loss-ratio trends, IBNR-to-case ratios, etc.

Gold-standard companies use internally or externally-developed reserving software for the reserve estimation process. Such software is well controlled and typically contains sufficient flexibility to allow users to apply the best methods for an applicable circumstance. Ad hoc calculation spreadsheets are rare exceptions, but are used, with appropriate end-user controls, when the flexibility of such a tool is necessary to improve the accuracy of the estimates. Further, systems facilitate the actuary’s documentation of the considerations underlying any assumptions or judgments that deviate from a guideline. Manual hand-offs/transfers (e.g., “copy, paste, value”) are negligible to the process.

Gold-standard companies employ well-established reserving principles as set forth by the Casualty Actuarial Society. Typically, use of a variety of methods will produce better estimates and provide more insight into the risks being evaluated. A gold-standard reserving process uses the best methods available for the circumstance, not just those that are the easiest to apply. Assumptions are vetted among claims, underwriting, and actuarial management to ensure an appropriate level of exchange of approaches and viewpoints. Further, where multiple business units and/or multiple locations are involved, dedicated teams are built to form a broader or global approach to evaluating certain parameters of reserving models (e.g., tail factors, loss trends, positions taken on special claim complexes) or for global lines of insurance (e.g., directors and officers, catastrophe reinsurance, high excess clash covers, aviation).

Finally, the reserving actuaries interact closely with the underwriters and pricing actuaries to obtain appropriate price-monitoring information to be considered in the reserve estimation process. Considerations should include an evaluation of how a company establishes rate level adequacy; the quality of systems, reports, and documentation of policies regarding the level of discretionary pricing available to the underwriter; the degree of data accuracy and completeness within the price monitoring reports; and the extent of exposure analysis and pricing evaluations within the underwriting audit process.

### 5. Documentation of reserving process

Gold-standard companies document their work in a manner that clearly leads from the data used in the actuarial analysis, which is reconciled to the financial records of the company, through the compilation and decision-making process and, ultimately, to the amounts recorded in the financial statements. The documentation contains supporting analyses and calculations in sufficient detail for another actuary practicing in the area to follow, consistent with Actuarial Standard of Practice 41, Actuarial Communications. Additional documentation exists to demonstrate the execution and effectiveness of peer review and other controls.

Companies following the Gold Standard record their best estimate and appropriately document it as such. The recorded amount may or may not equal the internal actuarial indication (or third-party actuarial indication, as applicable). In circumstances where the recorded amount equals the actuarial indication, a record is made by management actively supporting its view that the actuarial indication is the best estimate. In circumstances where the recorded amount does not equal the actuarial indication, a record is made by management that qualitatively and quantitatively supports why the recorded amount represents a better amount than the actuarial indication. Further, care is taken to ensure that the recorded amount is still considered to be a reasonable estimate by the internal actuaries.

## 6. Use of external actuaries

Gold-standard companies will engage third-party actuaries to perform corroborative analyses. Third-party actuaries often bring unique information and/or expertise that are not otherwise available to company employees, particularly for unusual or non-traditional exposures (e.g., asbestos).

Company management is engaged throughout the third-party review to understand the key methodologies and assumptions. Companies that do not utilize internal actuaries review the third-party indications, consider the results of the third-party report in the reserve-setting process, and document the resulting conclusions, even when no changes are made to recorded amounts. When companies that have internal actuaries also engage a third party, the third-party indications are reviewed, meaningful differences between the internal and external indications are understood and documented, and management considers these differences in its reserve setting process with appropriate documentation regarding the conclusions reached.

The frequency and breadth of third-party analyses depends on the nature of the liabilities (i.e., long-tail versus short-tail), the perceived value of independence, and the additional information and/or expertise that the third party can bring. Companies with more complex exposures have third-party reviews completed no less frequently than once per year. Appropriate controls exist over the data provided to the third party for analysis.

In addition, input and related advice are regularly sought from the external auditor's actuaries, including, but not limited to: views on reserve adequacy, effectiveness of controls, and ideas on how to improve the efficiency and effectiveness of reporting.

## 7. Financial statement disclosures

Gold-standard companies continuously benchmark their financial statement and MD&A disclosures with the SEC's evolving views on financial statement transparency. In particular, such companies provide clear and understandable disclosures regarding:

- The process management undertakes to estimate its reserves.
- How management arrives at its best estimate and why that amount is better than other relevant estimates.
- Reserve ranges and/or other key metrics that provide transparency as to the uncertainty in the estimates, with adequate characterization of the range or metrics provided.
- Presentations of accident-year data are consistent with the underlying actuarial analysis and management's best estimate, regardless of whether the underlying data were analyzed on an accident-year, report-year, policy-year, underwriting-year, or calendar-year basis.
- Explanations regarding the amounts and reasons for prior-period development, even if increases (or decreases) on some lines of business are offset with decreases (or increases) in other lines. Further, the amounts of development attributable to true claims development, premium development, accretion of discount, or foreign exchange are determined, presented separately, and appropriately characterized.
- Other information useful to individuals, such as global loss triangles.

With each of the above items, gold-standard companies have controls in place and prepare documentation in support of their disclosures with the same amount of rigor as that regarding the financial statement disclosures for loss reserves.



# Contacts

For more information on the Gold Standard, please speak to your usual contact within PwC's actuarial practice, or one of the following:

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