Corporate Governance and the Loss Reserving Process

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Abstract: Since the implementation at year-end 2004 of requirements under the Sarbanes-Oxley Act of 2002, many publicly traded property/casualty insurance companies have benefited from improved corporate governance surrounding the loss reserving process. However, the degree of improvement and resultant benefit has varied widely by company. While some have embraced the value of having stronger controls, others have viewed these requirements as resulting in significant additional process with only minimal benefit. The authors believe there are significant benefits to having strong corporate governance surrounding the loss reserving process. This paper defines key principles surrounding a well-controlled loss reserving process, and provides an evaluation framework to identify and prioritize opportunities for improvement. The areas addressed in this paper go beyond reserving approaches and data quality to consider the role of management, oversight by the board of directors and audit committee, documentation surrounding the reserve setting process, and financial statement disclosures.

Keywords: Governance, loss reserves, data quality, Sarbanes-Oxley, SOX, Model Audit Rule, Section 404, ASOP 41, ASOP 43, audit committee, controls, gold standard, framework.

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1. INTRODUCTION

Pursuant to the Sarbanes-Oxley Act of 2002, publicly held insurance companies are required to have processes and controls surrounding the financial reporting function. U.S. statutory reporting is expected to be subject to a similar requirement in the near future under the Model Audit Rule.

For property/casualty insurers, the estimating and recording of unpaid losses and loss expenses represents a significant part of the financial reporting process. Over the past several years, some insurance companies have taken great strides toward establishing a well-controlled environment surrounding their loss reserving process. Other companies have implemented a lesser degree of control, although generally sufficient to accomplish the requirements for management's Section 302 and Section 404 certifications and to receive an unqualified external audit opinion.

The authors have experience dealing with many types of companies, including large multinational insurance and reinsurance companies. Based on our experiences, we have developed a set of key principles that define a well-controlled reserving process. We have also described a continuum to measure a company's process and overall maturity for each of these key elements relative to an ideal and well-controlled reserving process.

The key principles and maturity framework examples described in this paper are not intended to be exhaustive in nature. Rather, these principles and examples are intended to be illustrative, designed to encourage readers and company management to think more broadly about the issues surrounding their reserving function.

1.1 Research Context

Based on our review of the CAS Research Taxonomy, the focus areas of the casualty actuarial science that this paper is addressing is I. Actuarial Applications and Methodologies, subtitles A. Accounting and Reporting, and I. Reserving. Since this paper focuses on the corporate governance and controls surrounding the loss reserving and financial reporting process, we have not assigned this paper to further subcategories under these areas.

In addition, based on our experiences and based on our viewing of the CAS Web Site for papers related to corporate governance and loss controls, we identified the following paper as existing literature that is relevant to this topic: "Sarbanes-Oxley Section 404 Internal Controls and Actuarial Processes," by Leslie R. Marlo and G. Chris Nyce in Casualty Actuarial Society *Discussion Paper Program*, 2006. While that paper addresses the requirements under Sarbanes-Oxley Section 404, the focus of this paper is on strengthening the corporate governance and control environment beyond the basic requirements of Section 404 to that of an optimal or ideal framework.

1.2 Objective

While Sarbanes-Oxley implemented significant additional requirements, the extent to which companies have developed sound processes and controls around their loss reserving process has varied significantly. This paper will describe the benefits of embracing a strong corporate governance model. In addition, we will define, in principle, best practices associated with a loss reserving process and a framework by which a loss reserving process can be measured using specific considerations to identify and prioritize opportunities for improvement.

1.3 Outline

This paper contains the following sections:

Section 2 describes at a high level the basic steps related to loss reserve controls that companies are required to take under Sarbanes-Oxley, the importance of corporate governance surrounding the loss reserving process, and the value of striving to have a best practices reserving process.

Section 3 defines a best practice, or "gold standard," reserving process, i.e., the characteristics of a company that has a best practices process for each of the fundamental elements of a reserving process.

Section 4 describes a framework for measuring the development or maturity of a reserving process for a company against the Gold Standard described in Section 3.

2. SARBANES-OXLEY AND GOVERNANCE SURROUNDING LOSS RESERVES

For many publicly held insurance companies in the United States, the Sarbanes-Oxley Act of 2002 was effective beginning year-end 2004, initiating a new era in management's obligations surrounding the financial reporting process.

2.1 Processes and Key Controls

This section provides a brief overview of the basic elements of a controlled loss reserving environment. Marlo and Nyce [1] provide a more detailed description of the requirements under Sarbanes-Oxley Section 404.

There are several key steps that management of a company complete when assessing their loss reserving process and control framework. These steps include (1) documenting the loss reserving process, typically including a narrative accompanied by a flowchart, (2) identifying significant risks within the loss reserving process, (3) identifying or implementing appropriately designed "key controls" to mitigate those risks, and (4) evaluating and testing the key controls to ensure they are designed appropriately and are operating effectively. The overarching goal of these steps is to ensure that appropriate controls exist over the financial statement balances.

Documentation of the reserving process includes the key steps that are used by management throughout the entire process, from the retrieval of raw system data for use in actuarial methods to the reserve amounts recorded on the financial statements. These steps would typically include the retrieval of claims data, the reconciliation of that data to financial records, the development of actuarial estimates, management's review and approval of recorded amounts considering the actuarial estimates, and the recording of the approved amounts in the financial statements. Many loss reserving processes have several subprocesses; each of these needs to be documented as well.

Once the loss reserving process is described in a comprehensive manner, the next step is for management to identify risks inherent in that process. These risks include, but are not limited to, the following:

- Claim data is inaccurate or incomplete or both
- Reserving methods or assumptions or both are inappropriate or unreasonable
- Spreadsheet errors are not identified
- Recorded amounts are not reflective of management's best estimate

Once the risks are identified, management then identifies or implements appropriately designed key controls to mitigate the risk of financial statement errors that could be caused by the identified risks. Such key controls may include the following:

- Reconciliation of claim data to financial records of company
- Peer review of actuarial methods and assumptions
- Technical review of analysis and spreadsheets
- Management review and approval of recorded reserve amounts

Once the key controls are established, management routinely tests the key controls for operating effectiveness (i.e., that the control is operating as intended). The effectiveness in the design and operation of these key controls is the cornerstone to having a well-controlled loss reserving process.

2.2 Documentation

Documentation plays an important role in a well-controlled loss reserving process in a number of ways.

Consistent with Actuarial Standard of Practice 41, "Actuarial Communications," (ASOP 41), actuaries are required to maintain documentation of their work in a manner that is sufficient for another actuary practicing in the same field to have the ability to evaluate the methods, assumptions, and judgments used in the loss reserving process.

Documentation also plays an important role in evidencing that a key control was executed. Clear and comprehensive documentation further allows management, their auditor, or another party to evaluate whether the control was executed as intended, i.e., to assess the operating effectiveness of that key control.

Documentation also is maintained to support that the amounts recorded in the financial statements reflect management's best estimate, particularly in cases when management's best estimates differ from actuarial estimates.

2.3 Our Observations

Based on our experiences supporting external audits under the requirements of Sarbanes-Oxley, we believe there is significant value in embracing a strong corporate governance model surrounding the loss reserving process. Some of the benefits include the following:

- Greater efficiency in operation, allowing for more efficient internal reserve reviews and reduced disruption from staff rotation and turnover
- Greater understanding by senior management, the audit committee, and the board of directors of the reserving process
- Reduced risk of reserve misstatement and decreased likelihood of reserve surprises
- Few or no deficiencies in controls
- Smoother interaction with external parties, facilitating a more effective and more efficient external audit and regulatory exam

Companies that operate with a minimum level of controls tend to struggle more often in the areas listed above. Turnover of staff in the loss reserving area tends to cause significant inefficiencies, disruption, and risk. Unexpected loss reserving issues tend to happen more frequently, in some cases each quarter, which leads to frustrated senior management and board members. External audits and regulatory exams tend to be more inefficient, time-consuming, and costly.

3. DEFINING A "BEST PRACTICES" RESERVING PROCESS

What does it mean to have a strong corporate governance model surrounding the loss reserving process? For purposes of describing this we have organized the loss reserving process into eight key elements:

1. Management and board involvement
2. Actuarial staffing and expertise
3. Data quality and reliability
4. General reserving approach
5. Reserving methodology
6. Documentation of reserving process

7. Use of external actuaries
8. Financial statement disclosures

For each of these key elements, we describe below a high-level summary of the characteristics that a best practices, or "gold standard," company would likely have. The examples cited are intended to be illustrative in nature, designed to encourage readers and company management to think more broadly about the issues surrounding the reserving function.

3.1 Management and Board Involvement

Gold standard companies have senior management and audit committees that are strongly committed to the loss reserving process, including the associated financial reporting. Senior management's commitment is demonstrated by the following:

- Prioritizing and committing necessary resources to the reserving process (e.g., staffing, computer systems, etc.);
- Minimizing potential conflicts of interest; (e.g., ensuring sufficient segregation of duties between the reserving and pricing actuaries);
- Understanding the reserving approaches, methods and key assumptions, and challenging these as warranted; and
- Proactively monitoring changes in reserve estimates and understanding the reasons for those changes through internal management reporting.

Senior management formalizes its oversight of the loss reserve process by initiating a reserve committee or equivalent management group. The reserve committee is comprised of key management stakeholders in the reserving process (e.g., finance, underwriting, claims), and is collectively responsible for determining the recorded reserve levels. As such, the committee is governed by a formalized process including a committee charter, and conclusions of the committee are documented and executed (see Section 3.7, Documentation of Reserving Process, for further discussion).

The lead reserving actuary presents the internal reserve package to the reserve committee on a quarterly basis or more frequently. The package includes supporting information sufficient for the reserve committee to make informed judgments and draw conclusions (e.g., support for key reserving assumptions, documentation of changes to key reserving assumptions, changes in indicated ultimate losses by class of business, schedules of loss reserve runoff/accuracy of prior estimates). The package also includes internal or industry benchmarks, some of which are "traditional" to actuarial work, while others may be common to financial reporting or investor analyst research.

The audit committee actively oversees the reserve-setting process by monitoring and evaluating the policies and principles surrounding reserve setting, the internal controls over the reserving process, and the transparency of related disclosures. In this oversight role, the audit committee meets regularly with internal actuaries, reserve committee members, external actuaries, and the external auditors. For a more detailed discussion of what information audit committees could reasonably expect to receive from their actuaries, refer to the report published in September 2007 by the American Academy of Actuaries' Committee on Property and Liability Financial Reporting, titled "An Overview for Audit Committee Members of P/C Insurers: Effective Use of Actuarial Expertise."

3.2 Actuarial Staffing and Expertise

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

- The loss reserving function is staffed by credentialed professionals (e.g., members of the Casualty Actuarial Society and American Academy of Actuaries) who 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, timely review of the relevant reserving components, and duties are segregated such that separate actuarial individuals are responsible for the primary analysis function, technical review, and supervisory peer review.
- Reserving personnel are independent of those responsible for underwriting and pricing the business; nevertheless, the reserving personnel consider key metrics evaluated in the pricing department (e.g., pricing or rate monitoring processes, expected loss ratios) and relevant items from other departments (e.g., changes in the mix of business, changes in claims settlement objectives, changes in emphasis on legal challenges).
- Reserving personnel have the requisite experience in the specific classes of business assigned to them. In addition, reserving personnel understand the financial reporting standards related to reserves and recognize the specific areas of the reserve process external auditors are required to

evaluate.

- The lead reserving actuary takes ownership over all reserve estimates, even for areas where the primary analysis may not reside in the actuarial department (e.g., asbestos and environmental, catastrophe reserves).
- Inefficiencies from staffing turnover in the actuarial department are minimized by a loss reserving process that is well organized, comprehensively documented, and properly executed. Documentation allows individuals new to the company's reserving process to understand the reserving methods, key assumptions, and historical conclusions.

3.3 Data Quality and Reliability

With respect to actuarial data, there are several consistent themes with companies exhibiting best practices:

- Loss, premium and other actuarial data are usable for estimation purposes as they are captured and contained in the company's systems, facilitating the reconciliation of data used in actuarial analysis to information published in financial statements.
- Computer systems are capable of capturing data in sufficient quality and detail needed for actuarial review. While highly complex claims or unusual coverages present a greater challenge in this regard, the difficulty in estimating liabilities for such exposures makes this capability that much more important.
- Manual data 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 the accuracy and completeness of manual entries.
- The data for actuarial analysis are available in a timely manner for actuarial review and management consideration in the current period's financial results.
- Managing general agent (MGA) and third-party administrator (TPA) interfaces are well controlled and regularly monitored to ensure that data is properly and timely incorporated into the loss reserving 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.

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.

3.4 General Reserving Approach

Best practices surrounding the general reserving approach involve a number of items such as the frequency of reviews, gross/ceded/net analyses, reasonableness checks and the use of software.

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

- For companies adhering to quarterly reporting requirements, the actuarial reserve evaluation process is performed and finalized on a quarterly basis and in a timely manner before final management decisions are made as to reserves and other financial statement items.
- For relatively straightforward classes of business (i.e., short-tail classes that lend themselves to traditional actuarial methods), full reviews are completed each quarter using data evaluated as of the quarter-ending date (i.e., not on a quarterly lag). For companies with classes of business where the size, complexity and/or long-tail nature of the exposures prohibit a comprehensive review in this time frame, reserve reviews are completed with one quarter lag and are coupled with a rigorous actual-versus-expected analysis for the most recent quarter.
- For nontraditional exposures that may not be suited to traditional actuarial methods (e.g., asbestos, pollution or directors and officers coverages), full reviews are completed at least once per year, with key monitoring statistics using current data 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 for reasonableness. The impact the reserving process has on other financial statement items associated with actuarially determined processes (e.g., reinsurance recoverable, adjustable ceding commissions, additional premiums) is also considered concurrently at this point in the process.

If reserves reflect a discount for the 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 reserve estimation process include reasonability checks and analytical or diagnostic metrics. These metrics may include loss ratios by accident year, various frequency and severity statistics, or other measures that are helpful to facilitate an understanding of the key drivers of the reserve estimates.

Gold standard companies use consistent and standardized reserving software that has been developed either internally or externally. Such software is well controlled (e.g., protected from inadvertent changes, planned modifications are thoroughly tested and documented, data inputs are separate from calculation modules) but typically contains sufficient flexibility to allow users to apply new methods, if desired. Ad hoc spreadsheets are rare exceptions, but are used with appropriate end-user controls when the flexibility of such a tool is necessary to improve the quality of the estimates. Further, the reserving software facilitates the actuary's documentation of their considerations for assumptions or judgments that deviate from a guideline. Manual hand-offs/transfers (e.g., "copy, paste, value") are negligible to the process.

3.5 Reserving Methodology

Actuaries following the Gold Standard prepare their reserve estimates in a manner consistent with guidance provided by Actuarial Standard of Practice No. 43, "Property/Casualty Unpaid Claim Estimates" (ASOP 43). ASOP 43 provides guidance for many topics surrounding the loss reserve estimation process.

In addition, a gold standard reserving process uses the most suitable methods available for a given circumstance, not just those that are the easiest to apply. Key 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 consistent parameters of reserving models (e.g., development tail factors, loss trend rates, reserve positions taken on special complex claims) or for exposures that tend to be insured and reinsured globally (e.g., directors and officers, catastrophe reinsurance, high excess clash covers, aviation, etc.).

Finally, the reserving actuaries interact closely with underwriters and pricing actuaries to obtain appropriate price monitoring information as inputs into 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.

3.6 Documentation of Reserving Process

Gold standard companies document their reserving process, from the data used in the actuarial analysis, which is reconciled to the financial records of the company, through the compilation and actuarial analysis, and, ultimately, to management's review and approval of amounts recorded in the financial statements. The documentation contains supporting analysis and calculations in sufficient detail for another actuary practicing in the area to follow, consistent with ASOP 41. Additional documentation exists to demonstrate the execution and operating effectiveness of peer review and other controls.

Companies following the Gold Standard record management's 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, if there is no internal actuarial indication). In circumstances where the recorded amount equals the actuarial indication, then a record is made by management actively supporting the actuarial indication is its best estimate. In circumstances where the recorded amount does not equal the actuarial indication, then a record is made by management that qualitatively and quantitatively supports, as appropriate, 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 actuarial estimate. Management's record supporting the recorded amounts is both understandable and consistent in principle across reporting periods.

3.7 Use of External Actuaries

Gold standard companies periodically engage third-party actuaries to perform corroborative reserve analyses. Company management understands that the third-party is typically independent and, therefore, is expected to provide a more objective assessment. In addition, third-party actuaries often provide unique information and expertise that may not otherwise be available to company employees, especially with respect to unusual exposures (e.g., asbestos and environmental ground-up reserve analyses).

Company management is engaged throughout the third-party review to understand the reserving methodologies and key assumptions. Companies that do not employ internal reserving actuaries will review the third-party reserve indications, appropriately challenge these indications, consider the results in the reserve-setting process, and document the resulting conclusions even if no changes are made to recorded amounts. For companies that employ internal reserving actuaries but also engage a third-party reserving actuary, 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 on the conclusions reached.

The frequency and breadth of third-party reserve analyses depends upon the nature of the liabilities (i.e., long-tail versus short-tail, level of complexity), the perceived value of an independent estimate, 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 over the reserving process, and ideas on how to improve efficiency in the reserving process and effectiveness of the financial reporting disclosures.

3.8 Financial Statement Disclosures

Gold standard companies continuously benchmark their financial statement and Management's Discussion and Analysis of Financial Condition and Results of Operations (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 determine its recorded reserves;
- The description of management's process for adjusting the liability for unpaid claims and claim adjustment expenses to an amount that is different than the actuarial indication, including the method used to determine the adjustment, the amount of the adjustment and the specific reasons why the adjustment is necessary;
- Either reserve ranges or other key reserve sensitivity metrics or both that provide transparency as to the uncertainty in the estimates, with adequate characterization of the range or metrics provided;
- Presentations of accident year data that are consistent with the underlying actuarial analysis and management's best estimates, 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) 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 that may useful (e.g., global loss development triangles);

With each of the above items, gold standard companies have controls in place and documentation supporting their disclosures in the same amount of rigor as for the financial statement amounts for loss reserves.

4. MEASURING A LOSS RESERVING PROCESS USING THE MATURITY FRAMEWORK

From our experience, we believe most companies do not operate at the optimal level defined in Section 3, at least not in all of the eight components. Further, we believe that many companies are at different levels of "maturity" as it relates to the individual eight components described above. For example, a company may be very strong with Management and Board Involvement, but not as strong with Data Quality.

4.1 Maturity Framework

To compare each component of a company's process relative to the optimal level defined in Section 3, we consider a maturity framework, in which we assess if the company's process is operating at one of four levels: minimal, developing, accomplished, or optimal. These levels are defined as follows:

Minimal—operating near or at the minimum level needed for management to complete their attestation and for its external auditors to complete their audit.

Developing—reserving process not well standardized, significant changes exist from period to period—the process runs smoothly some of the time but is inefficient or ineffective at other times; numerous gaps and shortcuts exist.

Accomplished—reserving process is well standardized—generally smooth, efficient, and timely; however, some gaps and shortcuts still exist, which are noticeable on occasion.

Optimal—the component operates near or at the optimal level described in Section 3.

After performing an unbiased, objective assessment of a reserving process, the actuaries, management, and the audit committee could work together to identify specific opportunities to improve current processes and then develop appropriate action plans to achieve a stronger corporate governance model.

4.2 Measuring the Loss Reserving Process

To measure a component of the loss reserving process against the maturity framework's levels described above, one approach would be to ask simple questions and develop answers that would correspond to a given maturity level. Several examples of these questions and answers are provided below.

4.2.1 Question - Management and Board Involvement

How committed is senior management to maintaining strong corporate governance over the loss reserving process?

Minimal	Senior management voices commitment, but their actions are vague. Personnel resources tend to be overwhelmed. Systems are often either old outdated or both. Management challenges actuarial results occasionally, but generally only when results are unfavorable.
Developing	Senior management voices commitment and its actions are clear in certain spots. Typically, resources are moderately strained and there is room for improvement. Management challenges results at times – favorable or unfavorable – but is not consistent in its method and process.
Accomplished	Senior management voices commitment and its actions are clear in most areas. Resources are at acceptable levels in all but isolated spots. Management challenges results regularly and understands the process but does not attempt to understand the details.
Optimal	Senior management strongly committed to loss reserving processes; regularly demonstrated by prioritizing and committing necessary resources, by minimizing potential conflicts of interest, by ensuring they understand and challenge reserving approaches, methods, and key assumptions, as warranted.

4.2.2 Question—Actuarial Staffing and Expertise

Are appropriate staffing levels supporting the loss reserving process?

Minimal Staffing levels allow for only annual or semi-annual review; detailed for some lines, high-level review for others. The same individuals often have multiple functions; e.g., one individual might be responsible for the primary analysis function, a self-technical review, and self-peer review.

Developing Staffing levels allow for quarterly review in some areas but are stretched in others—only semi-annual or annual reviews are completed in these areas. Reserve reviews are typically detailed in nature, with some exceptions. Duties are more segregated, although some control functions, such as formal technical review, might not exist.

Accomplished Staffing levels, roles, and responsibilities are sufficient in quality and quantity in most areas; however, several gaps still exist, often in highly specialized areas.

Optimal Staffing levels are of sufficient quantity and quality to allow for comprehensive, timely review of the relevant reserving components, and duties are segregated such that separate individuals are responsible for the primary analysis function, technical review, and supervisor peer review.

4.2.3 Question - Data Quality and Reliability

Many large and complex companies have data quality issues and system limitations; how do these limitations affect the reserving process?

Minimal Actuarial data (e.g., loss, premium) is not captured in sufficient detail for purposes of actuarial analysis for many lines of business, creating difficulties in directly reconciling actuarial data to the financial statements. Complexities of the business have outgrown system capabilities or systems tend to be outdated. Manual "work-arounds" are relatively routine, some of which have effective controls.

Developing Actuarial data is not captured in sufficient detail for purposes of actuarial analysis for some lines of business. Certain systems may be outdated, but the problem is not pervasive. Manual processing with effective controls is common.

Accomplished Actuarial data may not be captured in all cases in sufficient detail for purposes of actuarial analysis, but the problem is generally isolated. System limitations are minor.

Optimal Actuarial data is captured in sufficient detail for purposes of actuarial analysis, allowing for relatively easy reconciliation of the actuarial data to the financial statements. Systems capabilities dovetail with actuarial needs; manual processing is minimal or non-existent.

4.2.4 Question - Documentation of Reserving Process

How complete and comprehensive is the documentation surrounding the actuarial loss reserve estimation process?

Minimal No consolidated report or standard process exists. Actuarial calculations are part of the documentation, and are sometimes accompanied with a memorandum describing the methods and assumptions. Analyses are performed by multiple departments and are not summarized at the reporting segment and/or consolidated level.

Developing No consolidated report exists, although the reserving process is reasonably standardized. Actuarial calculations in final form exist, and typically include an explanatory memorandum as part of the documentation. Analyses are still performed by multiple departments and might be summarized at a high level at the reporting segment or consolidated level or both.

Accomplished While no consolidated, stand-alone report exists, such reports do exist for certain divisions within the company/segment. Results are summarized in some form at the reporting segment or consolidated level or both. Written documentation adequately describes the process, key assumptions, and findings.

Optimal Documentation is standardized and self-contained in a report and clearly leads from the data used in the actuarial analysis (reconciled to the financial records), through the compilation and decision-making process and, ultimately, to the amounts recorded in the financial statements.

4.2.5 Question - Financial Statement Disclosures

Are disclosures in publicly available information describing the company's loss reserving process and uncertainty in reserves effective?

Minimal The disclosures regarding the reserve estimation process are vague and do not represent clearly the underlying process. The disclosures related to uncertainty surrounding the recorded reserves are overly simplistic and do not explain the relationship of the uncertainty in the actuarial estimates to the resulting risk of reserve variability.

Developing The disclosures related to reserve estimation generally represent the process used by the company to establish reserves. The disclosures related to the reserve range are understandable, yet rather general and only minimally address the company's particular risks and variability.

Accomplished The disclosures accurately and clearly describe the process used to establish reserves. If ranges or other metrics are provided, the information is meaningful and generally relates to the company's particular characteristics.

Optimal The disclosures are clear on the process used to establish reserves and why management chose its particular estimate. Significant differences between recorded amounts and internal actuarial indications, if any, are provided and the reasons for such differences are appropriately described. Reserve ranges or other quantitative measures of variability are provided and described in an understandable manner to a non-actuary.

5. CONCLUSIONS

There are significant advantages to having a strong corporate governance environment and an optimally controlled reserving process. Loss reserves are typically the most significant and uncertain item on a property/casualty insurance company's balance sheet. 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, as well as a significantly reduced 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 on 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 assess their current practices in relation to an ideal, best practices reserving process. A complete assessment would identify opportunities and facilitate management's prioritization of key areas to help their company reap the rewards of a stronger corporate governance model.

6. REFERENCES

[1] Marlo, Leslie R., and G. Chris Nyce, "Sarbanes-Oxley Section 404 Internal Controls and Actuarial Processes," Casualty Actuarial Society *Discussion Paper Program*, 2006, 37-65.

Abbreviations and notations

ASOP, Actuarial Standard of Practice
MGA, Managing General Agent
TPA, Third Party Administrator
SEC, Securities and Exchange Commission
MD&A, Management Discussion and Analysis

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