The Value of Interacting with the Claim Department

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Submitted by:

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ABSTRACT

Casualty actuaries have long recognized that changes in claims patterns can create distortions in loss projections and loss reserve estimates. Various actuarial methods are used to detect, mitigate and adjust for (or avoid) these distortions. The actuarial literature provides considerable guidance and numerous techniques in this regard, and this paper does not re-cover this ground.

This paper describes and illustrates important benefits of regular and ongoing interaction between casualty actuaries and Claim Department personnel, and emphasizes that this is a two-way street.

- Qualitative and quantitative input from the Claim Department can be critical in helping the actuary understand, appropriately interpret, and even anticipate changes that affect the actuarial data and actuarial projections.

- The actuary's work, in turn, can serve as an effective diagnostic to identify potential macroscopic changes in the claims arena — including mix changes, reporting patterns, claim management issues, case reserving changes, and closure/settlement patterns. With these diagnostics in hand, the actuary plays a key role in the early identification, communication, analysis and resolution of unwanted, unintended, or unrecognized claim changes that may have important business consequences extending well beyond the Actuarial Department.

The message here is that the actuary must be an active — and interactive — part of the management team. Input ***from*** the Claims Department is arguably a necessary ingredient to the actuary's work. But when the actuary provides insight ***to*** the Claims Department, the actuary can add value to the entire organization.

INTRODUCTION

Recently, an actuary friend emerged from his annual medical checkup with a puzzled look. He had been in the doctor's office for three hours, so I became concerned that perhaps the news had been bad. "No," he said pensively in response to my inquiry, "but after three hours of poking, prodding, and running diagnostic tests, all my doctor told me was that my health was adequate for someone of my age and lifestyle. The doctor hardly asked me any questions. And, I certainly expected a bit more feedback -- some indication of changes in my body's performance, and some commentary on the positive and negative aspects of my diet, exercise, and other lifestyle choices." My friend shook his head in disappointment at the minimal value he had received from his checkup. But, being a busy consultant, he set his disappointment aside and hurried back to the office to issue a one page opinion that his client's loss reserves are adequate.

In many ways, an actuarial loss reserve review is analogous to an annual physical exam. The casualty actuary collects lots of quantitative information, runs various diagnostic tests, and reaches some conclusions that often are boiled down to a message that the insurance company's loss reserves are "adequate." Too little communication occurs at several stages.

This paper focuses on the potential value of ongoing communications between "the Actuary" and the Claims Department (referred to as "Claims" for convenience):

1. ***To support the Actuary's reserve analysis.*** Interviews with Claims can indicate operational or mix changes that affect the data used by the Actuary, and therefore may affect the Actuary's choice of analytical methods or parameters. Casualty

actuaries have long recognized the need to address these types of changes, and the literature provides various methodologies that are useful when such changes have occurred or are occurring.

2. ***Providing diagnostic feedback following the actuarial analysis.*** The actuary's results may help confirm, rebut or quantify some changes tentatively identified by Claims, or may reveal additional critical issues that are not yet understood by Claims and/or by senior management. Yet, too few actuaries highlight or communicate these insights adequately. As a result, like my friend's doctor, too few actuaries are extracting and delivering the full (even if indirect) value of their work.

3. ***Creating tools for Claims.*** In addition to providing "big-picture" feedback from specific analyses, the Actuary's access to data and tools may allow the Actuary to create or calibrate some modeling tools that help Claims perform its work on individual claims more efficiently or more effectively day-to-day. We have seen relatively few actuaries contributing in this arena.

The remainder of this paper is divided into three sections corresponding to these three different forums for actuarial communication with Claims. This paper uses brief case studies to illustrate the value of actuarial involvement and communication in each of these three forums. While these case studies are derived in various ways from real-life experience, we have modified, simplified, and combined real experiences in describing these cases. Primarily, we exercised these liberties in order to make our intended points clearer. For example, all of the numbers in the examples are well-behaved; real life, of course, is not always so well-behaved. In addition, the resulting case studies do not relate

to any specific insurance company or actuary; any resemblance to a real company or actuary is purely coincidental.

ACTUARIAL COMMUNICATIONS WITH CLAIMS – TO SUPPORT THE ACTUARY'S RESERVE ANALYSIS

The most basic of actuarial reserving methods generally assume, explicitly or implicitly, a consistency over time and across market segments of claim reporting and recording; claim count definitions; claim handling; case reserving philosophies and methods; mixes of claims; coverages, limits, and deductibles; and/or payment and closure speed. These (and other) factors may fundamentally affect the behavior of claims data and therefore the actuary's understanding, analysis, and interpretation of the data. The actuarial literature provides ample discussion of basic methods that perform predictably and appropriately in a stable environment (see *Bibliography* at end of paper). Of course, the world rarely behaves in an entirely consistent manner, and these consistency assumptions often are violated in the real world and in real insurance companies.

The Casualty Actuarial Society *Statement of Principles Regarding Property and Casualty Loss and Loss Adjustment Expense Reserves* states that "understanding the trends and changes affecting the data base is a prerequisite to the application of actuarially sound reserving methods. A knowledge of changes in ... claims handling ... affecting the experience is essential to the accurate interpretation and evaluation of observed data and the choice of reserving methods....[R]eorganization of claims responsibility or changes in claims handling practices ... are examples of operational

changes that can affect the continuity of the loss experience. The computation of the reserves should reflect the impact of such changes."

In the United States, the Actuarial Standards Board's (ASB) Actuarial Standard of Practice No. 36 (section 3.5.2) provides similar direction:

> Changing Conditions – The actuary should consider the likely effect of changing conditions on the subject loss and loss adjustment expense reserves. The actuary should consider whether there have been significant changes in conditions particularly with regard to claims, losses, or exposures that are new or unusual and that are likely to be insufficiently reflected in the experience data or in the assumptions used to estimate loss and loss adjustment expense reserves. Changing conditions can arise from circumstances particular to the entity or from external factors affecting others within an industry.
>
> The actuary should also consider the relevant characteristics of the entity's exposures to the extent that they are likely to have a material effect on the results of the actuary's reserve analysis. ... The actuary should obtain information from the entity regarding the significant changes in the practices or philosophy used by the entity's claims personnel and ascertain whether such changes are likely to have a material effect on the results of the actuary's reserve analysis or on the risks and uncertainties associated with the reserves.

Comparable standards are in place in many other jurisdictions. For example, The Institute of Actuaries of Australia *Professional Standard 300,* "Actuarial Reports and Advice on Outstanding Claims in General Insurance" provides the following direction (excerpts from paragraphs 20-22,29,37):

> The actuary should be familiar with the relevant aspects of the procedures for the administration and accounting of the insurer's claims and policies.
>
> The actuary should be conversant with the general characteristics of the insurance portfolio which may have a material bearing on the estimation of the liabilities. This may include familiarity with the

contractual terms and legislated benefits payable under policies written as well as other attributes, such as deductibles, policy limits and reinsurance arrangements.

The actuary also has a responsibility to be familiar with the general economic, legal and social trends in the community which may have a bearing on the liabilities.

The analysis should take into account any special features of or changes to the experience such as changes in deductible, aggregate limits, claims handling procedures, the mix of business within the portfolio, and the impact of large claims paid and outstanding. The analysis should investigate any trends in the development of the experience, particularly those from causes other than inflation.

Appropriate allowance for future costs of administering and settling claims (in addition to those included in payments on individual claims) should be made having regard for the insurer's level of expenses, organizational structure and future administrative developments. The complexity of the approach used to determine the allowance should be commensurate with the materiality of the amount of the allowance.

Newly drafted (March 2001; not yet finalized) regulatory standards in Australia provide further enumeration on these standards (Australian Prudential Regulatory Authority *Draft Guidance Note GGN 220.1*).

Thus, the profession has long-recognized the importance of understanding and reflecting Claims-related changes. Not surprising, then, that the actuarial literature is populated with techniques for adjusting raw data to a consistent basis, and techniques of analysis, to use when one or more of the basic "consistency" assumptions is violated. The published techniques address circumstances such as:

- Changing speed of claim closure during the historical experience period;
- Changing levels of case reserving historically;

- Varying rates of inflation historically and anticipated in the future;
- Changing mixes of claim types; and
- Changing coverage definitions (e.g., deductibles or limits).
- Changing laws or legal interpretations of coverage

The *Bibliography* at the end of this paper offers a partial list of resources in the literature.

The question, then, is not whether it is appropriate to identify and address claims-related changes in the choice of methods and parameters used in an actuarial reserve review. Rather, the question is "What are the best ways for a casualty actuary to become aware of, and understand the underlying change(s)?" Granted, the consequences of many types of Claims Department changes can be observed in aggregate actuarial data without any dialog with Claims. But, we have seen that an ongoing dialog with Claims can accelerate the Actuary's recognition of changes, improve the Actuary's understanding of those changes, and help the Actuary pinpoint the data that may help measure the change and the data that is likely to be affected by the change. The dialog also can reveal if the change is complete, or still in transition.

Before the Actuary has seen the first piece of numerical data, a conversation with Claims may reveal changes in: the mix of claims being presented to the company, operational methods, the use of outside adjusters, the handling of small claims, case reserving, the definition of a claim count, change in settlement philosophy, and so on. All of these types of changes, of course, may affect the behavior and interpretation of the data upon which the Actuary relies.

The Actuary should not necessarily expect this conversation to identify all the pertinent changes, however, since the Claims practitioners may be so close to the "trees"

(individual claims) that they may not see the "forest" that is revealed in aggregate data. Thus, after the Actuary's initial review of data diagnostics, follow-up conversations with Claims may provide critical insights that help explain the observed behavior of the data, and guide the way to projecting its future behavior. Such conversations are particularly important to the Actuary's understanding when the data behavior is inconsistent with the assertions by Claims, when multiple changes produced mixed signals in the data (which we frequently have found to be the case), or when the data behavior suggests some underlying changes that were not even mentioned by Claims.

The Actuary might use a multi-step process in the interaction with Claims: (1) Perform various standard diagnostic tests using the actuarial data; (2) Interview with Claims to identify any factors that Claims might be aware of that would relate to the analysis, and to discuss the interpretation of diagnostic test results; (3) Identify further investigation or analysis to be performed; (4) resolve (if possible) any outstanding issues that were subject to further investigation; (5) Completes the reserve analysis with the benefit of the information and insights; and (6) for unresolved issues, highlights the resulting increased uncertainty and identifies potential further work to resolve those issues.

A few relatively simple cases should serve to illustrate the benefits to the Actuary of a dialog with Claims. Note that these simple cases may create the impression that a fruitful dialog is easily launched. For many organizations in which Actuarial and Claims have not historically communicated, a concerted effort may be required, and initial conversations may be uncomfortable (or even seem antagonistic). For example, the Actuary may hinder communication by failing to use the vocabulary of Claims. Or, Claims, fearing that the Actuary is looking for problems to tell the CEO, may answer the

Actuary's questions narrowly, and not volunteer related useful information, rather than engaging in a full dialog. Over time, however, we almost always see the possibility for a collegial relationship to develop, and with it, increasingly effective dialog.

Case reserving

The behavior of a few basic diagnostics, such as movements in the average case reserve at different evaluation dates, or changes in the relationships between paid losses and reported losses, may serve to alert the Actuary to changes in case reserve levels. These diagnostics may even suggest the aggregate magnitude of the change in case reserve levels and imply an amount by which to adjust historical data to state it at an equivalent case reserving level. But, understanding the nature of the case reserve change allows the Actuary to tailor the response to the situation, as the following three examples illustrate.

Case 1.1: Claims implemented a new computerized case reserving tool on May 15, captured a snapshot of the database immediately before and after the change, and calculated the instantaneous effect on each age of accident year, as well the effect on different types and severities of claims. This information, which was forthcoming in an interview with Claims, facilitates the Actuary's restatement of old data to the level of the current case reserving process. This same information allows the Actuary to test an alternative set of approaches, namely to remove the effects of the recent case reserve changes from the latest evaluation, and perform the actuarial projections as though the pre-existing case reserve levels had remained stable. (Note: the likelihood that this type of information will have been captured by Claims is substantially improved if the Actuary-Claims dialog is ongoing, and the if Actuary was aware of the impending case reserve change

beforehand. This knowledge can trigger the Actuary to request that key statistics be captured before and after the change. Rarely do we see Claims Departments that initially anticipate the importance of capturing and communicating this type of information.)

Case 1.2: Claims historically had put no case reserves on a particular category of small claims; now Claims is applying a formula reserve of $x. With this information in hand based on an interview with Claims, the Actuary can directly test the effect of applying a formula reserve to these same types of cases historically, and thus create an adjusted data set that reflects a consistent case reserving practice.

Case 1.3: An adverse outcome on a precedent-setting court case is going to increase the cost of many open claims and all future claims that have similar characteristics. Claims re-evaluated the case reserves (upward) for the affected claims, producing the appearance of case reserve strengthening. Based on the interviews with Claims, and further parsing of the data, the actuary is able to conclude that the current case reserves are likely to be no more adequate relative to ultimate costs than was the situation historically (even though in absolute terms the case reserves are higher), and adjust the actuarial methods and parameters accordingly. With the benefit of the interviews, the Actuary also is able to distinguish between this type of permanent change in case reserve levels, and a one-time blip in results.

Claim Closure Rates

Some of the familiar methods that adjust for changes in claims patterns use the speed of claim closing as a proxy for payment speed, and adjust the historical triangle of paid losses in proportion to a recent change in closure speed.

Case 1.4: The Actuary observes a slowdown in claims closure rates. Historically, 80% of the claims were closed at the 36 month evaluation; most recently this dropped to 60%. At the same time, average case reserves appear to be dropping, leading the actuary to fear that standard paid and incurred loss projections both will understate ultimate losses. Interviews with Claims revealed that the actual payment processes and payment speeds have not changed at all. Rather, Claims formerly coded a claim as closed when all disputed issues were resolved and all that remained was to pay out an agreed schedule of payments. Now, Claims does not count a claim as closed until the last payment has been made. The Actuary correctly concludes that there is no need to adjust the paid loss data. Further, the Actuary is able to determine that the apparent reduction in average case reserves is not due to case reserve levels, but rather to an increase in the number of claims that are being counted as open (i.e., the denominator of the average case reserve calculation).

Case 1.5: The Actuary observes an apparent acceleration in claims closure rates. Further inquiry with Claims indicates no change in processes, but reveals a change in the mix of claims. The data being examined includes several types of claims, and there has been an increase in the volume of small, fast-closing claims, producing an apparent acceleration in closure rates. However, using the closure rates as a proxy for the impact on payment patterns would overstate the

adjustment, and therefore understate ultimate projections, since the dollars on these fast-closing claims are relatively small. The Actuary instead subdivides the data and analyzes the different types of claims separately.

Recent change in operations

In recent years, many insurers have sought improvements in the efficiency and effectiveness of their claims operations. Changes have taken a variety of forms, including centralization of certain functions (e.g., call-in centers); greater use of technology to support work flow, work processes, and the availability of information; greater outsourcing of some functions; re-arranging conventional claim department hierarchical personnel structures (e.g., to team-based structures); and others. While many of these changes may have been made in the interests of expenses, many others have been designed to improve and control claim costs. Many of the changes have the potential to alter future patterns in the actuarial data.

Case 1.6: Recent implementation of medical bill control techniques. The company (a slow adopter!) implemented more rigorous medical bill control techniques during the most recent calendar quarter. These techniques will apply to all future medical bills, on both old and new claims. While the company will incur additional administrative expenses, management is able to document best-estimate savings of 10% on medical bills. No appreciable change is expected in the speed of processing and paying medical bills. Due to the recent implementation of this change, no symptoms are yet visible in the actuarial data. Learning of the change through interviews with Claims, the Actuary is able to estimate – and adjust for – the mis-statement in ultimate losses that would be produced by traditional methods. Further, the Actuary is able to anticipate, monitor, and adjust for

distortions in payment patterns for exposure periods for which some medical bills are paid under the old system and some are paid under the new system. The Actuary also is able to estimate the effect of the change on loss adjustment expenses.

* * * *

As illustrated by these simplified cases, in our experience, the insights gained from dialog with the Claims Department aid the Actuary in

- Identifying and understanding the types of changes that are occurring in the claims data;
- Determining the types of methodologies and adjustments that will avoid or counteract any distortions or data movements resulting from the Claims Department change;
- Identifying any special types or subdivisions of data and/or diagnostics that may be helpful in detecting and measuring the effects of these changes;
- Developing expectations as to the degree and magnitude of the effects of the changes on the different components of the data;
- Assisting in proper interpretation of observed patterns in diagnostic tests performed on the Claims/Actuarial data.
- Eliminating false explanations of movements in the data;
- Identifying data necessary in order to make adjustments for the changes that are occurring;
- Forecasting the future performance of the data; and

- Specifically identifying areas of uncertainty (e.g., unexplained behavior of diagnostic data tests; changes in claims operations not evident in the diagnostic results).

Why would any loss reserving actuary **not** want these insights?

ACTUARIAL DIAGNOSTIC FEEDBACK FOLLOWING THE ACTUARIAL ANALYSIS: FOR THE BENEFIT OF CLAIMS DEPARTMENT MANAGEMENT

Many (but by no means all) actuaries have learned to obtain the input they need from Claims in order to improve their analyses as described in the prior section. But relatively few seem to view this as a two-way street. When the reserve indication is calculated and the results are presented to management, the Actuary's work too often is considered complete. We have found that some of the by-products of the Actuary's loss reserving work ultimately are even more valuable to the insurance company than is the loss reserve indication itself.

These "by-products" may describe performance characteristics of the business; indicate how it is changing over time (short-term or long-term); identify, isolate, and quantify problematic aspects of the business; and compare company performance to peer group indicators. Time and again we have seen these types of indicators serve to focus Claims Department management attention on an element of claims practice that is not performing as desired. Further targeted diagnostic work (such as more data analysis, process reviews, and claim file reviews) typically is necessary to confirm (or modify) the original hypothesis; guide a determination of needed changes; and quantify the impact on the bottom line. But, without the Actuary's insights, the serious investigation might have been delayed, or perhaps never launched. These types of insights, while not always

welcome news to Claims, may help Claims and senior management to identify and address a claims issue before it becomes a serious problem; or to recognize the need to explore alternative philosophies, methods, and procedures. And, as time goes by, further actuarial diagnostics can help monitor the intended and unintended effects of revised claims procedures, thereby providing valuable feedback to Claims as well as key insights leading into subsequent actuarial reserve analyses.

The Actuary's insights don't just identify Claims issues, of course. By-products of actuarial loss reserving engagements frequently provide the foundation for estimating current and potential future profitability of a segment; detecting issues with the way pricing tools are being used; identifying and quantifying shifts in the mix of business; and evaluating the potential performance of reinsurance products. But the following brief case studies are intended to illustrate the types of insights related to Claims that we have seen emerge from reserving engagements.

We also have observed powerful teamwork results on due diligence engagements (potential acquisitions) where actuaries and claims practitioners have partnered to analyze the effectiveness of the target company's claims operations. The data observations developed by the Actuary in the course of analyzing the target company's balance sheet loss reserves can serve to identify potential areas of examination in the claims arena. With tangible numerical indicators of trends and changes, the interviews and explorations can proceed more efficiently and can focus (in part) on identified issues.

Case Reserving

Sometimes we actuaries develop the attitude that case reserves exist only to help (or hinder!) our actuarial reserving processes. In fact, of course, case reserves serve

many other purposes, including: playing an integral role in strategizing, planning, and budgeting the future course of a claim; calculating experience rates, retro rates, and dividends; and enhancing the accuracy of allocating ultimate claim costs to different policyholders or business segments for profitability analyses. Thus, if the Actuary is able to identify a changing pattern of case reserving, that insight is important to the management of the Claims Department (and Underwriting) as well as to the Actuary. A cautionary note, however: a broadcast to all claims examiners that "case reserves are inadequate" may wreak havoc as individual adjusters attempt to compensate by modifying their case reserving habits in a variety of ways. The result can be a level of case reserves that varies haphazardly over time and across adjusters. Any message to claims examiners must be filtered carefully by management of the Claims Department in order to manage consistency of adjuster performance.

Case 2.1: Redundant case reserves. In Company XYZ, claims examiners set case reserves on liability cases based on a "worst case" scenario. This practice dated back a number of years, originally having been established in the interests of "conservatism." Over time, adjusters began being judged based on their ability to settle cases for less than the case reserve. Two adverse consequences resulted: cases were settled for more than necessary (just less than worst case), and as the cost of settling claims escalated, adjusters also gradually edged case reserves higher, creating an unfortunate cycle of claim cost escalation. During the course of a reserve review, the Actuary observed case reserve levels far in excess of competitors, although less so currently than historically. The Actuary also observed that paid claim severity trends have been running higher than trends in average case reserves, which in turn have been higher than the company's

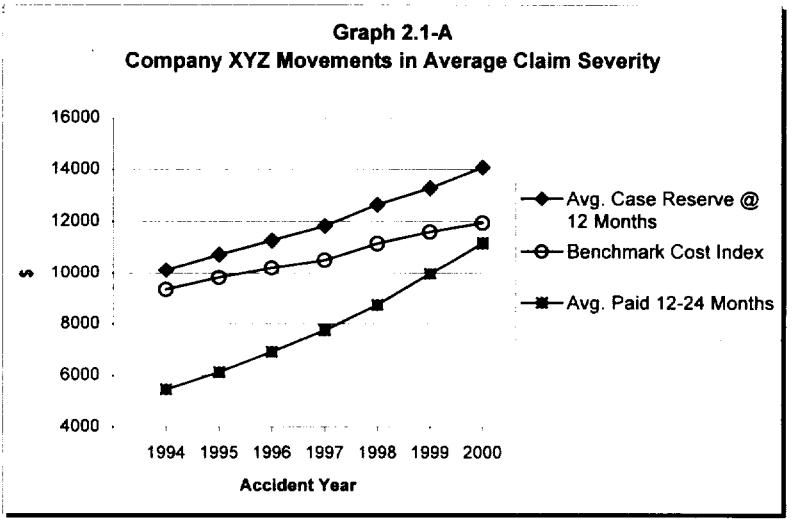
benchmark severity index for this business. See Exhibit for Case 2.1. The Actuary brought these observations to the management team within the Claims Department. While considerable additional research and analysis (involving both Actuarial and Claims) were required in order to determine what was transpiring, and to correct both the process and the metrics being used in Claims, the Actuary's communication launched the process.

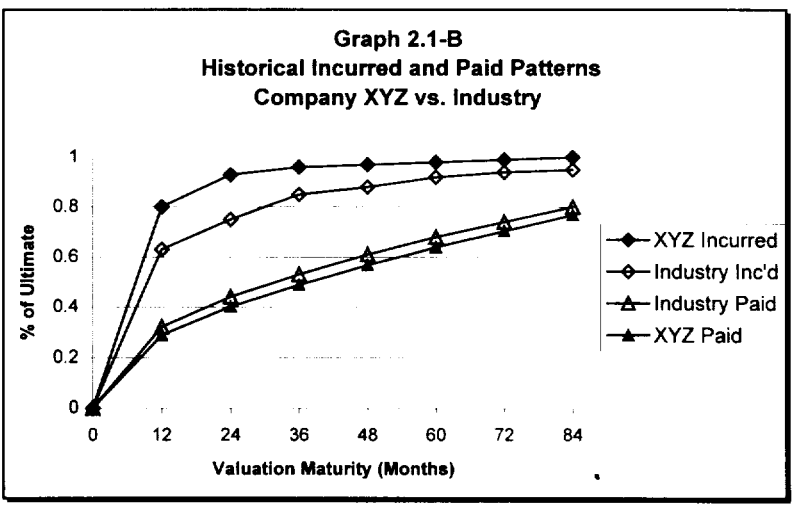
We note that we have heard this "worst case" scenario many times. Sometimes, it is an accurate description. Other times, it proves to be a convenient but inaccurate explanation for deteriorating claims results that actually are attributable to poor underwriting or other non-claims factors. Drawing this distinction requires careful analysis by the Actuary and Claims working together.

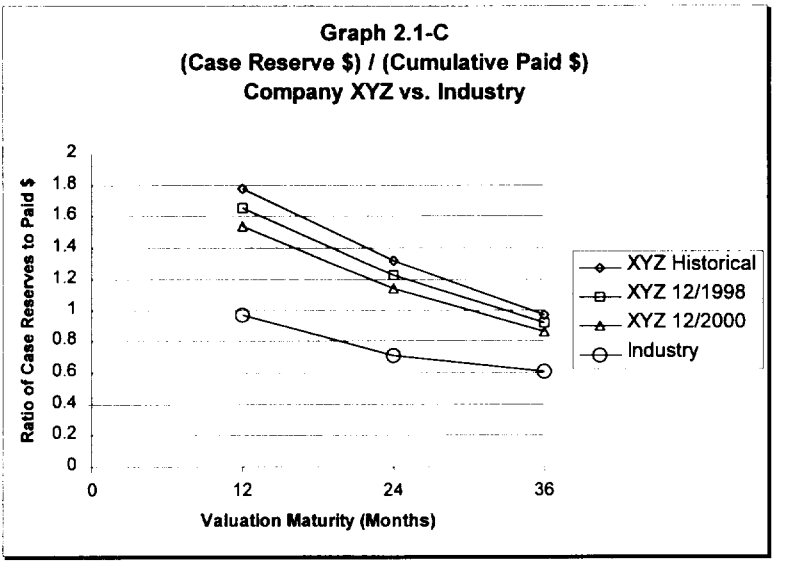
EXHIBIT FOR CASE 2.1

Actuary's observations in preparation for meeting with Vice President-Claims

- Historically, our case incurred losses approached their ultimate level much faster than for the industry. Our payment patterns were similar to the industry's (Graph 2.1-B).
- This same information may be depicted as the relationship of our total case reserves at a particular valuation maturity, to our cumulative paid losses at the same valuation maturity. In this view (Graph 2.1-C), it appears that recently our case reserves are not as strong as historically, though still above industry levels.
- Average case reserves per claim are growing faster than our benchmark severity index for this coverage, and the average payment per claim is growing significantly faster than the index (Graph 2.1-A).
- Claim count patterns (reporting speed and closure speed) are stable (graph not shown).
- Graphs are displayed on the following pages.


Graph 2.1-A
Company XYZ Movements in Average Claim Severity
16000
14000
12000
10000
8000
6000
4000
$
1994 1995 1996 1997 1998 1999 2000
Accident Year
Avg. Case Reserve @ 12 Months
Benchmark Cost Index
Avg. Paid 12-24 Months


Graph 2.1-B
Historical Incurred and Paid Patterns
Company XYZ vs. Industry
1
0.8
0.6
0.4
0.2
0
% of Ultimate
0 12 24 36 48 60 72 84
Valuation Maturity (Months)
XYZ Incurred
Industry Inc'd
Industry Paid
XYZ Paid


Graph 2.1-C
(Case Reserve $) / (Cumulative Paid $)
Company XYZ vs. Industry
Ratio of Case Reserves to Paid $
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0
12
24
36
Valuation Maturity (Months)
XYZ Historical
XYZ 12/1998
XYZ 12/2000
Industry

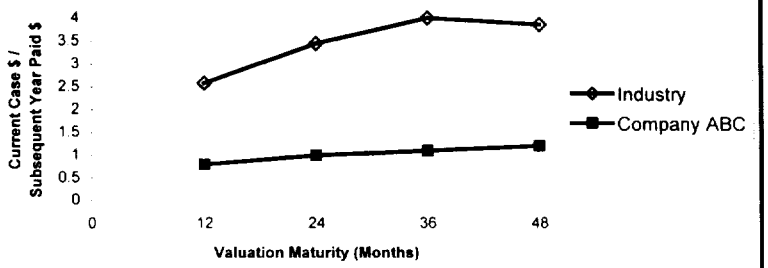
Case 2.2: In Company ABC, due to minimal case reserve training of new claims examiners, workers compensation case reserves were established on a stair-step basis, typically at a level just sufficient to cover the following year of expected claim payment activity. This proved to be a reasonable match for Company ABC's approach to claim management, which was simply to pay each bill as it came in, with little review or strategizing about the course of treatment and care of the injured worker. The Company's development patterns were relatively consistent over time, and the Actuary was able to perform the actuarial loss reserving analysis each year using standard methodologies. However, the Actuary observed that Company ABC's loss development patterns differed significantly from peers (see Exhibit for Case 2.2), and together with colleagues in Claims, investigated the causes and implications. One outcome was that serious claims became subject to a formal case reserving discipline, and thus were more easily highlighted for monitoring and strategy development. The most important outcome related not directly to case reserves at all, but to a realization that the claim management process required revamping.

EXHIBIT FOR CASE 2.2

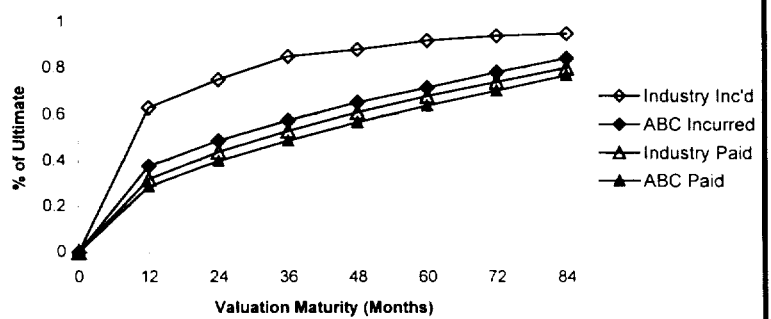
Actuary's observations in preparation for meeting with Vice President-Claims

- For this long-tail line of insurance, our Company's case reserves at any point in time are just barely greater than payment activity on those claims over the following 12 months, while the industry carries case reserves equivalent to 3 or 4 years of payment activity (Graph 2.2-A).
- Our aggregate loss development patterns are relatively stable, indicating that our processes have been relatively consistent over time.
- Our company's losses develop to an ultimate level over a longer period of time than is the case for the industry (Graph 2.2-B).
- Graphs are shown on the following page.

Graph 2.2-A
Years of Payments to Exhaust Case Reserves
Company ABC vs. Industry



Graph 2.2-B
Historical Incurred and Paid Patterns
Company ABC.vs. Industry



Case 2.3: In Company C, the Actuary unilaterally undertook an educational effort to help claims examiners understand actuarial projections. "The ultimate loss that I project ranges from 5% to 25% above the case reserves that you set," the Actuary explained, "which means that in the fullness of time we will learn that current case reserves are 5% to 25% too low." The next quarter, case reserves had risen for each adjuster who attended the training session, but by widely varying amounts. Neither Actuarial nor Claims knew how to interpret the results.

As noted earlier, this type of actuarial communication aids neither Claims nor Actuarial, but creates chaos – the equivalent of a sharp tug on the steering wheel while on a slippery road. Actuarial communications about reserve levels need to be communicated to the right level of management. The CEO, Claims, Underwriting, and Actuarial must jointly decide on the best course of action and communication.

Claim Closure Speed

Conventional wisdom has it that a closed claim can't develop adversely, and that a closed claim is therefore better than an open claim. This apparent truism does not always hold.

Case 2.4: The Actuary observed a sudden acceleration in the speed with which the Company was closing claims. This observation aligned with Claims' previous comment that it was undertaking to reduce the volume of stale claims. However, the Actuary noted that the average severity of closed claims was rising sharply, and that the closure rates primarily were accelerating on the most recent, immature accident years rather than reducing the inventory of open claims on

older years. See Exhibit for Case 2.4. Further dialog revealed that management, in the interests of focusing claims examiners, had established one-dimensional goals for an 18 month period that focused entirely on reducing the total inventory of open claims. The ensuing analysis showed that adjusters had responded to the one-dimensional goal, as requested. But, the analysis also revealed that, rather than focusing on closing difficult old stale claims, the adjusters had focused on the high volume of new claims. And, the adjusters had discovered that it was relatively easy to get claims closed by offering settlement amounts more generous than had been the Company's previous practice. As a result of these findings, the Company quickly returned to a balanced scorecard concept whereby multiple aspects of claim adjuster performance were monitored and measured.

EXHIBIT FOR CASE 2.4

Actuary's observations in preparation for meeting with Vice President-Claims

- At year-end 1999, Management and Claims agreed that the company had accumulated an undesirably large open inventory of old, stale claims. Claims launched an initiative to address this by incenting adjusters to reduce the total volume of open liability claims.
- As Graph 2.4-A shows, we did reduce the volume of open claims significantly even though the volume of new claims remained stable.
- However, as Chart 2.4-B (next page) shows, the closure activity by the adjusters focused on 1999-2000 accident year claims, not on the old, stale claims.
- The average case reserve has increased 16%, versus an ongoing 5% severity trend. This is probably a result of having closed the newer claims, but more analysis is needed.

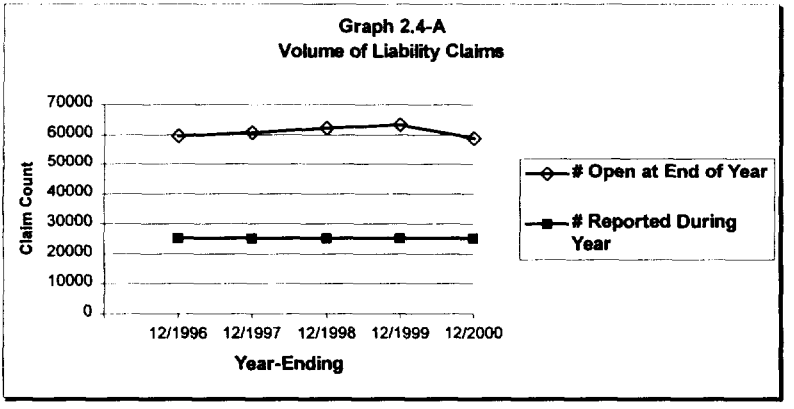


Chart 2.4-B

	Open Claim Counts as % of Reported Claim Counts			Counts Closed Calendar Year 2000	
		12/2000			
Accident Year	12/1999	Historical Projected*	Actual	Historical Projected*	Actual
Prior	0%	0%	0%		
1991	3	0	1	750	563
1992	10	3	5	1,750	1,313
1993	14	10	11	1,000	750
1994	20	14	16	1,500	1,125
1995	25	20	21	1,250	937
1996	32	25	27	1,750	1,313
1997	40	32	34	2,000	1,500
1998	49	40	38	2,250	2,750
1999	60	49	40	2,750	5,000
2000		60	43	10,000	14,250
Total				25,000	29,500

*Historical projected was calculated by assuming that 12/1999 open %'s would recur at 12/2000

Fraud

Patterns of fraud that may be invisible at the individual claim level may come into sharp focus for the Actuary who has access to the aggregate book of business.

Case 2.5: In the course of a reserve analysis, the Actuary was comparing claims costs for various segments of a book of business. The Actuary began to see a pattern whereby a certain geographical region consistently displayed higher average costs than did nearby regions. Further analysis revealed a particular group of medical providers and an attorney whose involvement were significantly correlated with high claim costs. See Exhibit for Case 2.5. Unable to explain these differences, the Actuary and Claims Management turned the findings over to the Fraud Unit, which was able to establish a pattern of wrongdoing.

EXHIBIT FOR CASE 2.5

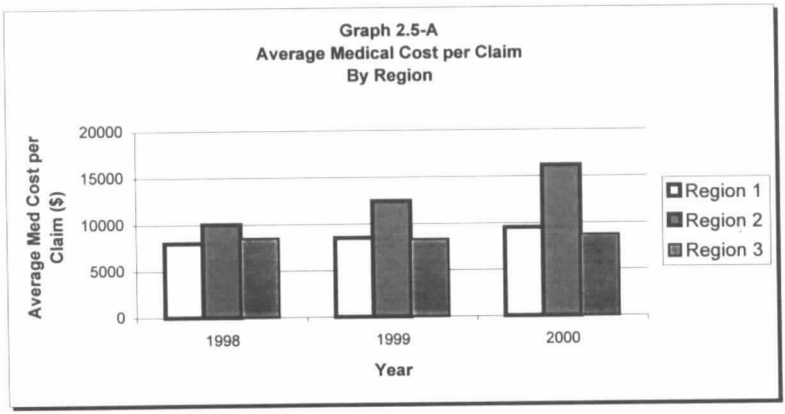
Actuary's observations in preparation for meeting with Vice President-Claims

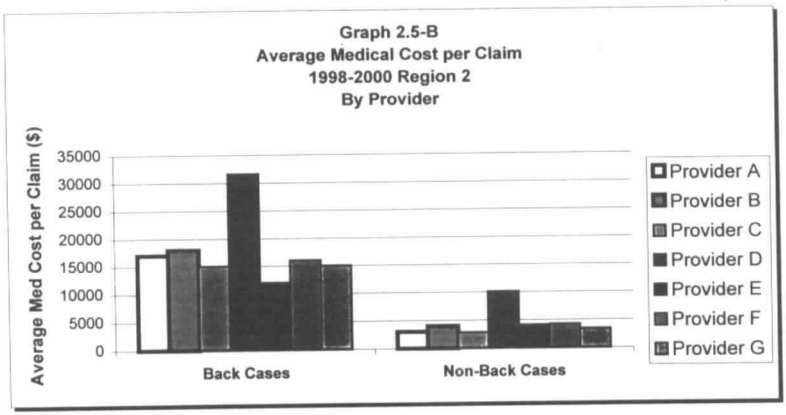
- Region 2 is producing average claim costs for liability that are well in excess of the other regions. This differential began to emerge three years ago.

- Within Region 2, Medical Provider "D" has significantly higher costs per claim than other Medical Providers. This appears to be only partially explained by the mix of claims and injuries being handled by D (higher % of back injuries), though a more thorough analysis will be required of this issue.

- The volume of claims handled by D has increased dramatically over the past few years, and an increasing percentage of the claims handled by D involve back injuries. Interestingly, similar patterns are evident for Attorney "X", and a high percentage of the claims handled by X also are handled by D, and vice versa.

- See graphs on following page.


Graph 2.5-A
Average Medical Cost per Claim
By Region
Average Med Cost per Claim ($)
20000
15000
10000
5000
0
1998
1999
2000
Year
Region 1
Region 2
Region 3


Graph 2.5-B
Average Medical Cost per Claim
1998-2000 Region 2
By Provider
Average Med Cost per Claim ($)
35000
30000
25000
20000
15000
10000
5000
0
Back Cases
Non-Back Cases
Provider A
Provider B
Provider C
Provider D
Provider E
Provider F
Provider G

Workload projections and Loss adjustment expense

Actuaries are accustomed to examining changes in the mix of claims and considering possible implications for trend, loss development patterns, pricing, loss adjustment expense reserves, and so forth. These same mix changes have implications for the claims department in planning for needed changes in staffing mix or staffing levels, use of outside vendors, etc. Similarly, comparisons of a Company's loss adjustment expense levels to peer company loss adjustment expense levels may assist the Actuary's analysis, but may be equally interesting to Claims.

Case 2.6: As part of an analysis of loss adjustment expense reserves, the Actuary models the projected future volume of reported claims, closed claims, and open claims, by calendar year. After reflecting a recent change in the mix of business written, from monoline liability to multiline, the Actuary concludes that: the volume of new claims will increase significantly; the volume of pending claims will increase only slightly; and that the mix of claims will shift from relatively complex liability claims to a combination of liability and first party property claims. The Actuary requires input from Claims to estimate the cost implications of these shifts, but also shares the results of the model to assist Claims in reviewing staffing plans. See Exhibit for Case 2.6.

EXHIBIT FOR CASE 2.6

Actuary's observations in preparation for meeting with Vice President-Claims

- As you know, we have increased the volume of Commercial Multi Peril business significantly, and expect continued growth. This is a significant change from the historical emphasis on monoline liability.

- I thought you would be interested in our projections (next page), which indicate:

  — A significant increase in the total volume of new claims, with all of the volume increase being property claims

  — Because the property claims open and close so much faster, we anticipate a relatively modest increase in the inventory of open claims.

- Let's get together to discuss these projections and to examine the cost implications, which I need to compare to our internal pricing assumptions. In addition, if I can refine these estimates or provide additional information that would assist you in your staffing projections, let me know.

Chart 2.6-A						
		Actual			Projected	
	1998	1999	2000	2001	2002	2003
Earned Premium ($000)	$53,000	$61,000	$70,000	$87,000	$96,000	$103,000
Approx. Premium Mix						
Liability	90%	87%	84%	70%	64%	64%
Property	10	13	16	30	36	36
Volume of Arising Claims						
Liability	2,226	2,359	2,489	2,460	2,360	2,410
Property	742	1,057	1,422	3,160	3,980	4,070
Total	2,968	3,416	3,911	5,620	6,340	6,480
% Growth in Volume of Arising Claims						
Liability		6%	6%	-1%	-4%	2%
Property		42	35	122	26	2
Total		15	14	44	13	2
Inventory of Open Claims (Year-End)						
Liability	2,780	2,932	3,094	3,166	3,134	3,131
Property	147	196	266	545	755	810
Total	2,926	3,127	3,360	3,711	3,889	3,940
% Growth in Volume of Open Claims (Year-End)						
Liability		5%	6%	2%	-1%	0%
Property		33	36	105	39	7
Total		7	7	10	5	1

Unfortunately, in our experience, too few claims departments enjoy the benefit of an actuarial model of the future volume and type of claims. Such a model has the potential to allow Claims to plan and manage the staffing level and structure that will be needed in order to maintain a particular level of service, and a particular balance between claim expenditures and LAE.

Case 2.7: An Actuary's analysis of loss adjustment expense reserves includes an examination of the Company's historical levels of loss adjustment expense (relative to volumes of claim payments, numbers of claims, etc), and a comparison of those levels across several regions. At first blush, the Company's expense levels in the Midwest region appear higher than in other regions. However, further examination indicates that the Midwest region has different mix of claims than other regions: a higher proportion of liability claims. Adjusting for this mix reveals that expense levels in the Midwest region are relatively consistent with the other regions. This insight, together with a parallel analysis of the impact of business mix on claim frequency and claim cost, provides an improved baseline for evaluating and quantifying several strategic changes that are being contemplated for the Claims department.

It usually is relatively easy to develop a long list of actuarial observations, quantified as a by-product of the Actuary's loss reserving analysis, which can potentially serve as raw material for a substantial conversation with Claims. Such a list might include, for example:

- Changes in the relative adequacy or absolute level of case reserves, across the board or for particular types of claims;
- Changes in the level of claim counts, the speed of claim closure, the definitions of different types of claims, the definition of which claims will be counted or not;
- Trends or step-movements in claim severities, across accident year or evaluation, either for claims in general or for a particular type of claim;
- Shifts in the mix of business or the mix of claims, across any dimension;
- Loss adjustment expense levels, in total or for particular components of loss adjustment expense;
- Changes in the Company performance (along any indicator) versus the performance of peer companies, or consistent differences in the level of Company performance versus peer companies;
- Any quantitative observations that confirm or rebut Claim department changes that were discussed during pre-analysis interviews; and
- Any other interesting diagnostic.

Of course, for communication with Claims, the list ought to be pruned to the most interesting diagnostic results, particularly those with implications for the most critical areas of Claims.

The purpose of this paper is not to offer the reader a specific checklist of items for the Actuary to share with Claims. It certainly is not to suggest that each month the Actuary should drop a huge package of computer output on Claims – we would rather see the Actuary provide a few key items accompanied by observations and questions.

Nor is the point to suggest that the Actuary needs to be able to discern the inner workings of the Claim department based on reviewing a handful of aggregate diagnostics. Rather, the point is for the Actuary to be ever-mindful that patterns in the data observed by the Actuary may be of considerable interest to colleagues in other functional areas, and may not previously have been observed by those colleagues. It is not necessary for the Actuary to have a complete explanation of the underlying causes of the patterns prior to these conversations. In fact, it is more likely that the Actuary's resulting conversation with other Company executives will *lead to* a useful exploration, understanding, and (if necessary) treatment of the underlying causes. And, it is likely that the resulting conversation will stimulate the release of additional information and perspectives on underlying business or operational changes that have occurred or are occurring, thus aiding the Actuary in the reserve analysis. (Note, again, that the appropriate level for the conversation is Claims executive, not the front-line Claims practitioner, whose performance could become volatile if influenced directly by the observations of the Actuary.) Conversely, when the Actuary fails to share observations with Claims executives – observations that are uniquely accessible to the Actuary viewing the "big picture" – the Claims executives are left to navigate with incomplete information and insufficient feedback, and do not necessarily have an adequate foundation for identifying trends and changes that are of interest to Claims.

Actuaries, talk to your Claims executives! Tell them what you are seeing, and ask for their perspectives.

CREATING TOOLS FOR THE CLAIMS DEPARTMENT

A third general area in which actuarial-claims interaction can create value for the Company is in the development of tools for Claims. These tools might include, for example, case reserving benchmarks or algorithms to identify patterns that signal the need for expert intervention (such as patterns of potentially fraudulent behavior, claims characteristics that indicate the need for medical intervention in the process, litigation management signals).

The common thread is that the Actuary, with access to the "big picture," can extract pieces and patterns out of that big picture to support various aspects of the claim-specific focus of the claims examiner.

Case reserving tools

Claims examiners typically see one claim at a time; actuaries, of course, see the aggregation of many claims. This perspective, and the Actuary's access to the full scope of data, positions the actuary to assist with the design and development of case reserving tools.

One form of an actuarial case reserving tool is a system that estimates the ultimate cost of claim based on its current characteristics (for workers compensation, for example, these characteristics likely would include nature of injury; degree of physical and occupational disability; age; occupation; wage; type, extent, and cost of medical treatment to date; jurisdiction). The parameters used in such a model can be calibrated by the Actuary based on the known cost of past claims, adjusted to current and future cost levels; statutory benefit structures; forecasted rates of medical inflation; and so on.

While such a tool can provide very useful benchmarks for the claims examiner, critical roles remain for the claims examiner, and we do not advocate blindly abdicating case reserving responsibility to a computer algorithm. First, every case has potentially unique characteristics, and it is a useful exercise for the claims examiner to review whether the key characteristics selected by the computer algorithm, and the resulting case reserve, are pertinent to the case at hand – or whether the case presents some characteristics that suggest a different case reserve. To facilitate this type of review, the actuarial case reserving tool should publish, for each claim, the key characteristics driving the estimation of ultimate cost. In addition, further analytic work by the Actuary might permit the algorithm to identify claims and claims characteristics most likely to lead to exceptional outcomes, and thus most likely to warrant human review.

The second reason to include the human in the case reserving process is the view that case reserving is an integral part of the establishment of a game plan and strategy for management of the claim, rehabilitation of the claimant, and eventual disposition of the claim. In this view, the case reserve is essentially the quantitative summary of that planned course of events, treatments, and outcomes. Just as in a business, budgeting is an integral part of the business planning process, and really may be viewed as a financial summary of the planned business activities. Case reserves play a similar role for an individual claim.

The Actuary's involvement in developing case reserving benchmarks makes the human intervention of the claims examiner more valuable, not less. It adds another tool to the claims examiner's toolbox. The tool can improve decisionmaking by helping single out the claims most likely in need of human intervention, putting key information at the

examiner's fingertips, and identifying the characteristics that are most subject to uncertainty in the evaluation process.

Identification of problematic claims

Just as an actuarial case reserving support tool can, as one of its functions, identify cases that are exceptional, or that are fitting some predetermined pattern, more generally actuaries can play a role in developing tools to highlight claims for other types of intervention. This intervention could include examination of patterns of potentially fraudulent activities, scrutiny of a litigation management plan, or review of the need for a change in medical treatment plans.

CONCLUSION

Talk to your Claims executives. Ask them questions. Listen to them. Share your insights, your tools (customized to their perspectives), and your expertise. Share your views of the "big picture"; illuminate it with the Claims view of what is happening on the front lines, and of the trends that can be observed from that perspective.

You will be able to perform your job more effectively, as well as help your Company perform more effectively.

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