Pricing versus reserving — reconciling the differences

Casualty Loss Reserve Seminar (CLRS)

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Building a better working world

Overview

- There are many differences between the ways in which pricing actuaries and reserving actuaries perform their respective jobs (besides differences that should exist, such as trending loss data).
- Session overview:
  - Explore current state based on observations made through the panelists' past experiences
  - Delve into areas where problems have existed for the insurance and reinsurance industries
  - Devote time to issues such as programs and data reconciliation from past pricing submissions
  - Provide suggested areas for improvement based on past practices
  - Focus on prepared slides, but relevant commentary and talking points from the audience are welcomed

Agenda

- Identify observed differences between pricing and reserving actuaries
- Discuss challenges confronting both pricing and reserving actuaries
- Discuss common problems and recommendations
- Highlight issues using example: programs

Salient points

- People often are very involved in their own work; help provide perspective on the interactions of pricing and reserving actuaries
- Provide some areas where potential improvements could be implemented between pricing and reserving actuaries
- Point out some prior issues in the processes
- Raise awareness

Pricing actuary background

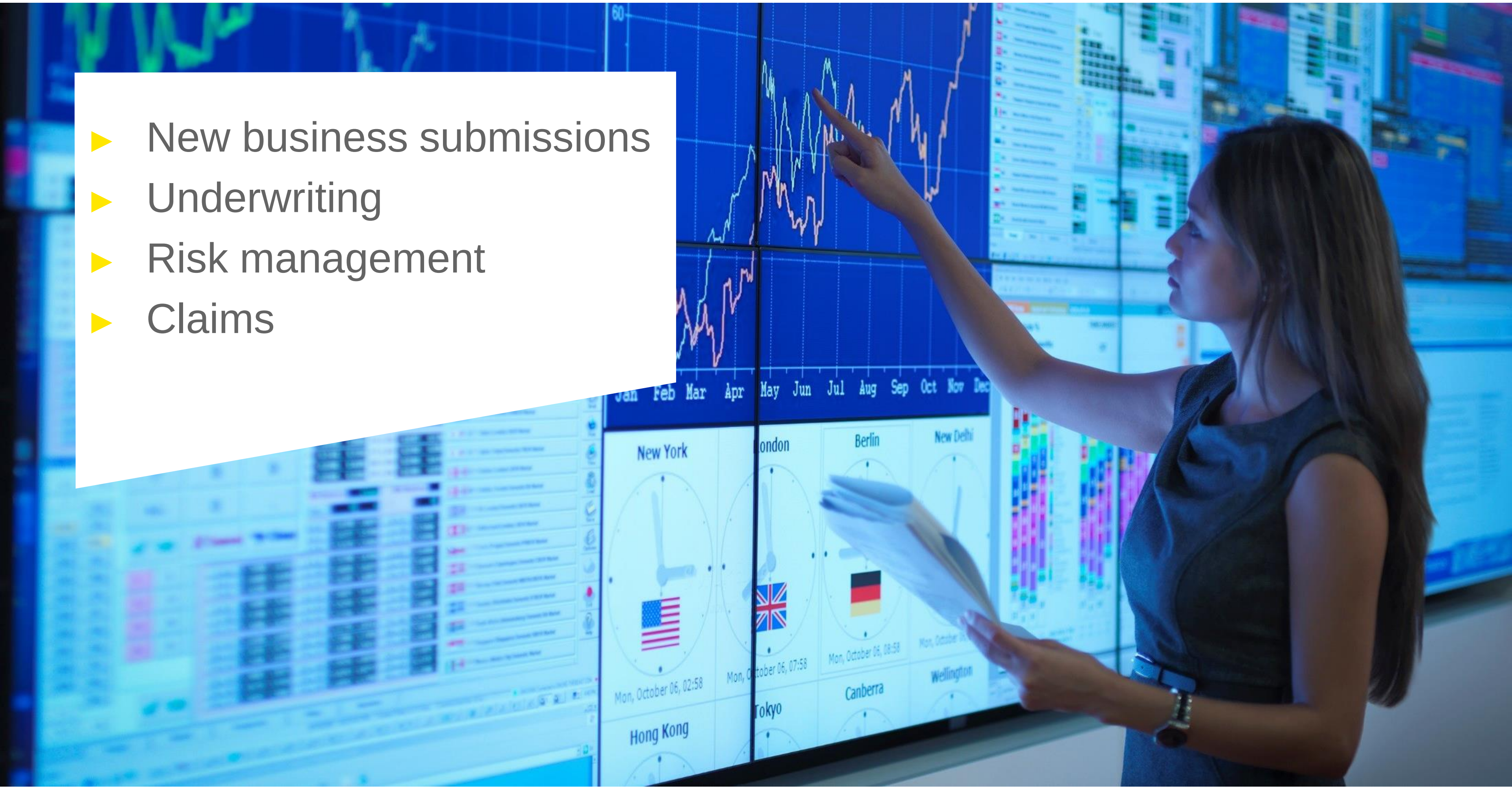
- Focused on determination of rates or price to be quoted
- Margin adequacy or rate of return usually contemplated
- There may be adjustments to final bound pricing based on changes and negotiation
  - If change resulting from negotiated price is small, pricing documentation may not be updated to reflect the final pricing.
- Formal rate study may be produced
  - Rate change or territory differential, or other change factors may be introduced.
- Large account, program or portfolio of accounts
  - Pricing may be utilized for determination of the initial expected loss ratio or initial expected ultimate loss for reserving.
  - Pricing work is focused on binding and writing accounts at market levels.
- Pressure to work with underwriting teams and management

Reserving actuary background

- Dedicated to adequacy of reserves
- Focused on changes in prior estimates (adverse or favorable development)
  - Less retrospective testing performed on pricing estimates
- Typically, assumptions remain relatively static
- Many companies utilize purchased software
  - More purchased software is utilized for reserving than pricing
- Changes in methods and assumptions
  - Usually explicitly explained and documented for reserving
  - Reserving models tend to be more stable, but pricing changes more rapidly based on movements in the marketplace
- Pressure from management to determine a final result
- Current year assumptions usually have a strong pricing influence and should be reconciled between pricing and reserving

Challenges — pricing actuaries

- New business submissions
- Underwriting
- Risk management
- Claims



EY

New business submissions

- Lack of credible historical data
  - Limited data
  - Non-reconcilable (to carrier loss runs)
- Cleansed data
  - Large losses removed from claims history
  - Policies/segments removed from portfolio
- Major considerations
  - Non-renewal of portion of portfolio
  - Problem accounts
  - Major issue with new business is the anti-selection component of pricing the risk
  - Submissions are often “sanitized” or “as ifs” for problem areas
  - Companies do not often reconcile prior submissions (no database maintained on submissions)
  - New business typically has a higher loss ratio which is not priced for by actuaries (“the anti-selection component”)

Underwriting

- Changes in appetite or targeted classes
- Changes in underwriting guidelines
  - Communication challenges
  - Difficulty predicting impact of changes
  - Challenges in monitoring execution
- Monitoring underwriting performance
  - Challenges in establishing KPIs
  - Performance often left to underwriting audits
  - Concern should arise if significant growth (beyond expectations) is observed
  - Underwriting process usually involves around five years of data for experience rating
  - Five years of rating for long-tailed lines of business can have minimal credibility

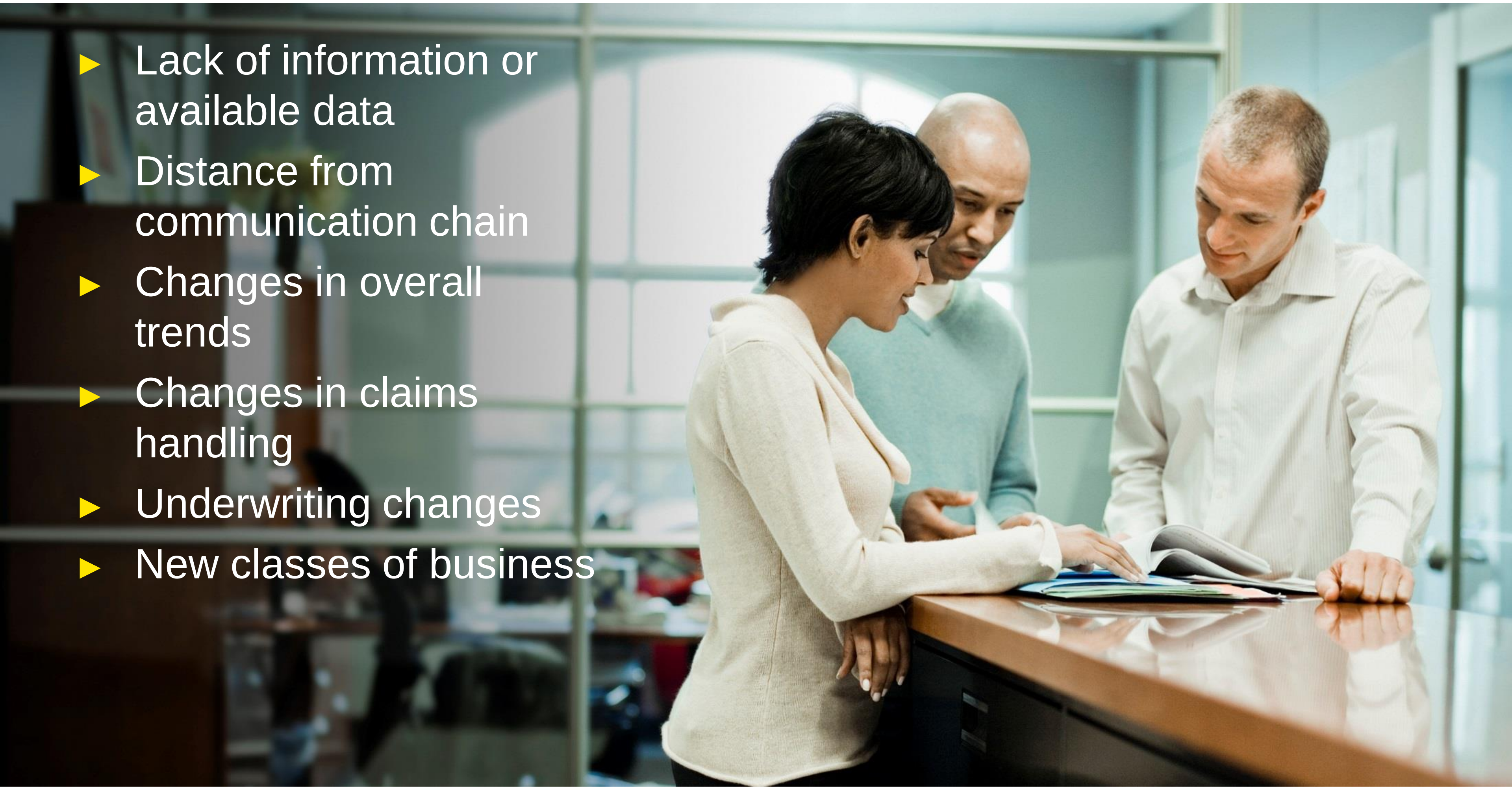
Risk management

- Similar challenges as underwriting
- Changes in risk acceptability
- Vendor changes
- Monitoring/validating performance
- Often, risk management is represented as being improved most typically on problematic account
- Often, pricing actuaries will factor in the change before it is represented in the data

Claims

- Change in claims handling
  - Company/third-party administrator (TPA) to company/TPA (any combination)
  - New staffing, new claims initiatives
  - Reporting process
  - Case reserving practices
  - Settlement philosophy
    - Speed-ups or slow-downs in claim settlement rate
- Claims handled by a TPA
  - Relationship between stakeholders and TPA
  - TPA ownership a conflict of interest
  - TPA's capabilities: expertise and staffing

Challenges — reserving actuaries



- Lack of information or available data
- Distance from communication chain
- Changes in overall trends
- Changes in claims handling
- Underwriting changes
- New classes of business

Lack of information

- New programs
  - Lack of historical data
  - Substantial swings as programs are removed/added
- Lack of history
  - New class of business, such as cyber
- Loss experience not available
  - The World Trade Center and many other places after the tragic events of September 11, 2001
- Key statistics are not included in the data
  - Claim counts are not coded or not reliable

Lack of information — rate monitoring

- Some companies have a process, some do not
- Rate monitoring may or may not capture:
  - Underreporting or misreporting of exposure
  - Credits or debits excluded
  - Increase in coverages granted during a soft market
- It is relevant in pricing exercises if prior premium levels for a book of business are being utilized

Distance from communication chain

- Excluded from day-to-day engagement with business
  - Underwriting may be done offsite (such as a program).
  - Underwriting may be done in a local office, domestically, or abroad.
  - All logic from underwriting may not be transferred to a company system.
  - Individual file review for significant risks may not be practical or feasible.
- Engagement an issue for reserving as it is after the fact

Changes in overall trends

- Some classes of business have trend cycles.
  - Professional lines of business
  - Automobile liability
  - Workers' compensation
- It can be a function of problematic nature of mandatory lines of business.
  - For example, auto liability and workers' compensation
- It can be a function of the increased cost of insurance
  - For example, medical malpractice
- Often, there is a period of time before trends are determined and factored into the data.
- In practice, business trends are typically factored into pricing more than reserving.

Changes in claims handling

- Increases or decreases in payouts
  - System changes
  - Staff turnover
  - Policy changes (drive to settle and close out claims)
- Case reserve weakening and strengthening
  - Change in claims philosophy
  - Exclusion or inclusion of formula reserving
- Changes in claims handling
  - Pervasive issue for both pricing and reserving
  - More explicit changes are made in pricing than reserving
  - Usually used to justify reduction in reserving levels

Changes in underwriting

- Underwriting changes may not be communicated to reserving department.
  - Need to interview underwriting staff.
  - Need to be aware of both internal and external developments.
  - Changes in staffing can affect the mix of business being written within the same class of business.
  - Staffing can affect the quality of the underwriting.
- External competitors can affect the quality, rate level and the mix of business being bound.
  - May or may not affect the pricing process and function.
  - Will impact the reserving function.

New classes of business

- Reserving
  - Need to determine appropriate assumptions
  - Payout patterns, reporting patterns, expected loss ratios
  - Pricing work can be a great starting point
  - Need to adjust assumptions as business becomes more mature
- Lack of reserving history associated with new classes
  - Typically, pricing assumptions are invalidated in a short period of time
  - More new classes fail than succeed

Shared problem areas

- New Business
- Lack of credible data/ information
- Reconciliation
- Communication

Shared problem areas — new business

- New business accounts often have experience that is omitted from the submissions provided.
- Companies don't always maintain prior submissions for reconciliation purposes.
  - Comparison to identical submission
  - Comparison with identical industry segments
- Reserving actuaries typically have reconciliation procedures to prior analyses performed, while pricing actuaries typically do not.
- Account may have a history of problem areas or business excluded from the submission.
- Observation:
  - The more problematic the account, the greater amount of tinkering with the prior experience that has been provided.
- Recommendation:
  - Companies should explore tracking submission activity and formally acknowledge or reconcile to prior submissions.

Shared problem areas — lack of credible data/information

- Often, history is limited.
  - Limited in volume (years/maturity)
  - Inconsistent combination of business segments (patchwork)
- Classes such as contractors, umbrella liability, elevator liability and environmental exposure have a long period of time before losses are reported.
- Pricing exercises can be a credibility weighting of exposure and experience rating.
- Five-year history for some of these problematic classes can be virtually useless.
- Need to get more information or be more heavily weighted based on industry statistics.
- Reserving actuaries can deal with this better as they will typically select ultimates based on expected loss methods and Bornhuetter-Ferguson methods for five years.
- Recommendation:
  - Pricing actuaries should think about weighting their account pricing selections more strongly to industry exposure methods, which factor in number of years of renewal. This would shift the pricing approach closer to the reserving approach, particularly in longer-tailed lines where account experience is meaningless.

Shared problem areas — reconciliation

- Pricing and reserving actuaries differ in reconciliation practices.
- Individual accounts don't always reconcile past pricing findings with current developments.
- Business changes from year to year and the knowledge that can be gleaned from a formal tie-out of the prior pricing estimates.
  - Examples:
    - An account was priced at a 58% loss ratio last year.
    - Current year is reserved to 60%.
    - The pricing estimate may still yield a 58% loss ratio.
- Recommendations:
  - There is a need to have the feedback loop from pricing and reserving, which is not always evident.
  - Pricing procedures could be greatly improved with formal reconciliation guidelines and adherence to such.

Shared problem areas — communication

- Changes to the business are constant.
  - Mix shifts occur naturally: appetite, competition, etc.
  - Changes by discipline: underwriting, risk management and claims
  - Organizational evolution: operational platform, executive/senior mgmt, etc.
- All of the changes can and do affect book of business.
- Keeping informed of the changes and potential impact is incredibly difficult.
- Recommendation:
  - Develop multifaceted communication streams and relationships across internal/external avenues.
  - Reserving actuaries should include discussion of interviews conducted, reviews of prior audit findings and how this work impacts methods and assumptions utilized.

Programs example

- New Business
- Lack of credible data/ information
- Reconciliation
- Communication

Programs example — new business

- Program writing insurance companies can grow rapidly by soliciting program administrators (PAs)
- Lack of history with PA/program introduces risk.
- History may not be reflective of future performance.
  - Experience may not tie to the book being written.
  - Appetite may have shifted.
  - Changes may be introduced.
    - Underwriting, risk management and claims
- It is important for a company to have rigorous due diligence process where actuaries (pricing and reserving) are heavily involved.
- It is important for a company not to have rapid growth in terms of the number of new programs written due to high risk associated with programs.

Programs example — data

- Programs can be written on a general agent system, which the insurance company may or may not have access to.
- The accuracy of pricing and reserving can be severely impacted by timing delays and the lack of available data from third-party systems when programs are written.
- The lack of data is typically a larger issue for reserving actuaries, as pricing data is typically required in order to implement and renew a contractual relationship.
- The lack of data can affect the quality of the level of reserves and can also impact the quality of the data utilized for financial reporting.
- Companies have run into financial difficulties for not keeping up with adverse program experience.

Programs example — data reconciliation

- For new business, reconciliation is key to understanding nuances of the historical data and confirming that rollover is as anticipated.
- For existing business, reconciliation is important for validating successful transfer of all data.
- Both are often challenged due to antiquated or limited databases.

Programs example — rate levels reconciliation

- Insurance company functions such as underwriting and claims are delegated.
- PAs are often paid based on a percentage-of-premium basis with, in some cases, a sliding scale arrangement included based on profitability.
- There is strong incentive for a PA to maintain premium levels in order to keep revenue stable (conflict of interest).
- PAs often have the ability to adjust premiums by adjusting exposure levels, rate credits and debits.
- Rate levels need to be monitored via sampling for both the pricing and reserving components to be accurate.

Programs example — communication

- Program-writing insurance companies often write many insurance programs, with very limited resources responsible for managing the business.
- Distance from the “front line” makes a challenging environment for the actuarial staff to stay on top of developments.
- It is imperative that pricing and reserving actuaries be connected, internally and externally.

Illustrations of items that have gone wrong in practice

- Company writes workers' compensation is one state, one industry group.
- Company has a stable, profitable book of business and a long history.
- Workers' compensation is cyclical.
  - The market takes a downturn and the company begins crediting its business.
- Pricing actuaries don't catch the rate level drop.
- Reserving actuaries don't increase loss ratios for later years.
- Company goes out of business.
- Black box pricing and underwriting is used.
- No interviews, no review of rate level.
  - Steady-state process in a changing market.

Illustrations of items that have gone wrong in practice

- Company writes programs and underwrites block of business.
- Company does not update loss ratios on certain programs in a problematic sector.
- Company continues to grow books of business based on other companies pulling back in the marketplace.
- Company has to strengthen reserves for business and leave the sector.
- Pricing actuaries and reserving actuaries are unaware of, as the data for the business is not in a company system.
- Communication and the distance to the data is a key factor associated with this issue.
  - All segments need to be reviewed and actuarial opinions should not be provided unless some type of monitoring is performed.

Illustrations of items that have gone wrong in practice

- Company writes excess of loss business.
- Company uses first dollar and small deductible excess business deductible factors to price business.
- Deductible credits are inappropriate for high excess business.
- Company writes a majority of its business as high excess and its business is priced much cheaper than the marketplace.
- Pricing actuaries miss it based on the amount of detail utilized in developing deductible credits.
- Rapid growth and portfolio review should have indicated there was an issue and a change in the mix of business written.

Illustrations of items that have gone wrong in practice

- Company writes a high risk line of business that is highly profitable for many years.
- Company does not perform necessary pricing due diligence on the business but profitability has been achieved, as the market is a subscription market.
  - Many companies take share percentages following the lead.
- Market softens while the company has internal pressures to grow block of profitable business.
- Company takes more lead positions on its business, dictating terms.
- Company loses large amounts of money and withdraws from sector.
- Rapid growth in declining sector and change in business practice is not detected based on black box reserving processes.

Illustrations of items that have gone wrong in practice

- Company has profitable business sector specifically focused on specialty business.
- Management of the company decides to grow the profitable books of business in a declining marketplace.
- Management believes the company has some control of marketplace pricing.
- Company loses great deal of money and leaves many profitable sectors.
- Rate levels and changes in underwriting terms need to be considered in both pricing and reserving.
- Most markets are easy-entry, easy-exit and profitability is a function of commodity rate.

Illustrations of items that have gone wrong in practice

- Companies enter problematic lines of business.
  - For example, New York contractors and elevator liability business
- Most companies see the opportunity for continual book of business growth in these problematic lines.
- Rates can be high relevant to exposure.
- Trend rate, uncertainty and catastrophic nature of these businesses lead a high percentage of insurers to fail.
- Unless one has claims, risk management and significant underwriting experience in these areas, the chance of success is virtually nil.
- As one grows the size of its book of business, the chance of reproducing industry average results increases dramatically.

Illustrations of items that have gone wrong in practice

- Companies are profitable and write business that is stable in terms of lines of business and geography.
- Rating agencies and investors wanted increased profits and diversification.
- Company expands geographically and grows as a result.
- Lack of knowledge in new areas results in financial ruin.
- Pricing actuaries did not have proper information to price the business.
- Adverse selection impacts new business.
  - Adverse selection takes the form of brokers and insureds knowing the business better than the insurance company.

Illustrations of items that have gone wrong in practice

- Companies price excess of loss business based on underlying premium.
- It can make sense to use excess relativities to price business.
- The further removed a company becomes from the underlying business, the more risky this practice becomes.
  - Workers' compensation spirals
  - London market business
- Pricing actuaries need to understand the adequacy of underlying business in order to price excess based on relativities.
- Reserving actuaries should not rely on pricing estimates.
- High excess business priced on relativities is meaningless.

Item that is often not contemplated

Deal is entered into with no exit strategy. Should pricing actuaries contemplate in their analysis?

- Some classes have a highly cyclical pattern.
  - California workers' compensation
  - Workers' compensation in general
  - Auto liability in certain states
  - Non-standard auto liability
- Pricing determination is made based on the current state, with no anticipation of an exit strategy and the associated cost.
- Insurance company management is typically hesitant to contemplate exit from a business that is still profitable, even though it is predicted to be highly unprofitable.
- Cost and timing to exit business should be considered.
- Not relevant from a reserving standpoint, as only earned exposures are contemplated.

Summary

- Highlighted differences between pricing and reserving actuaries
- Discussed challenges confronting both pricing and reserving actuaries
- Isolated common problems and recommendations
- Provided an example: programs
- Discussed illustrative examples

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