Seven Questions You Should Ask Your Actuary

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Framework of Questions

Why ask these questions!
How to read an actuarial report
  – Context of findings
Financial context
What questions to ask
  – Technical
  – “Big picture” issues
How to Read An Actuarial report

Generally contains 4 parts:

- Scope of work
- Conclusions of actuary – key result
- Caveats and limitations
- Supporting schedules
  - Include historical documents/data

Formal document sufficient for another actuary to reach conclusion
Conclusions of an Actuarial Report

Best estimate at a given point in time
  – E.g. at FYE June 30, 2012

“Central” estimate usually selected from a range of reasonable estimates

Conclusion based on
  – Available data (or similar supplementary data)
  – Actuarial methodologies – standard or modified to meet issue at hand
  – Actuarial judgment
Contents of Actuarial Report

Contents of typical actuarial report

– Estimated liabilities – “look back” perspective
  • Include unpaid losses, ALAE and ULAE
– Funding levels – go forward basis
– Miscellaneous analysis
  • Financial position – surplus tests
  • Confidence level funding
  • Trends
  • Retention analysis
  • Cost allocation amongst participants
  • Rating analysis – e.g. deductible credits
Q1. Does the data have integrity?
Data is King!

Flawed data ~ flawed conclusion
Management has responsibility for accuracy of data
Auditors perform some tests for data completeness
Actuaries only check for reasonability and consistency
Program Features

Retention history
  – Per occurrence, aggregates
Form: occurrence or
  claims made (tail liability)
Deductibles, recoveries
ALAE (within retained limits, etc.)
Exposure history + projections
  – New buildings, flat payroll, etc.
Q2. Are the liabilities reasonable?
Financial Statement Context

Required by accounting standards
  – GASB – public sector
  – Statutory Accounting – insurance regulation
  – GAAP – private sector, on-going concern

Records assets and liabilities
  – Largest component of liabilities are unpaid claims
Liability for unpaid claim costs including incurred but not reported (IBNR) claims

Liability should be based on:

- The estimated ultimate cost (including effects of inflation and other societal and economic factors)
- Using past experience adjusted for current trends
- Other factors that would modify past experience
Components of Ultimate Losses

Paid losses – no outstanding liability
Case reserves – set by TPA or entity
  – Claim reported but not yet paid
IBNR – *estimated* by actuary
  – Future development on claims already reported
  – Loss events that are yet to be reported
  – Reopened claims

Liabilities = Case Reserves + IBNR

*At that point in time*, say FYE June 30, 2012
Liabilities...what’s the opinion...

Formal Statement of Actuarial Opinion:
- Reasonable
- Deficient or inadequate
- Redundant or excessive
- Qualified opinion – cannot be reasonably estimated or unable to render an opinion
- No opinion – deficiencies in data, assumptions, analyses – cannot reach conclusion
Liabilities – who owns it

Recorded by management
  – Management establishes “best estimate”

Board/State “owns” the financial statement

Auditors rely on actuary’s estimate of unpaid claims

Auditor’s opinion – financial statements fairly represent financial position
Q3. Is the funding actuarially adequate?
Considerations for Funding Level

Not required by GASB
Set adequate levels to meet claims and expenses
Factor in variability of projected losses
  – Confidence levels
    • *Variability around actuary’s “best estimate”* – key concept
    • look at amounts (*magnitudes, not just percentages*)
    • Review risk variability
    • Financial capacity to withstand variation
Rate stability from year to year
  – Varies based on SIRs, coverages
Accrual or Pay-as-you-go Basis

Pre-fund each year on a stand-alone basis
  – Project each future fiscal years separately
  – Add expenses
  – Budgetary pressures

Pay-as-you-go basis
  – Forecast cash flows
  – Add expenses
  – Variability varies by coverage (Wc vs. general liability)
  – Large claim payouts (contrast WC vs. Liability)
Expected losses
  - Loss rate x exposure
Inv income offset
  - Discounted loss rate
Risk Margin
  - Confidence level
Overhead expenses
Reinsurance premium
Surplus addition or withdrawal

surplus +/- reins premiums
overhead expenses
risk margin
investment income
discounted losses
Flow of Annual Funding As Claims Mature – adding to deficit or surplus

![Graph showing the flow of annual funding as claims mature, with bars representing different claim periods and funding amounts.](image-url)
Q4. What are the underlying trends?
**Internal and External Trends**

**Internal trends: evaluate potential impact**
- Is frequency or severity changing
  - Number of claims per exposure and average cost of claim
- Is there a shift in types of claims
- Are large claims increasing
- Are new claims emerging, e.g. EPL

**External trends:**
- What about results of similar entities – benchmarking
- Any external influences – judicial decisions, medical trends, legislative changes
Reserve Development Tests

Tests on reserve development and current reserve deficiencies to surplus

Explain reason for failure
  – E.g. very large claim, class action lawsuits
  – Review if underlying assumptions understating reserves

Review if reserve development is due to changes in “claim settlement” life cycle
Reserve Development-to-Surplus

One-year (and two-year) reserve development to surplus threshold less than 20% of surplus

within acceptable range
Q5. What are the key assumptions?
**Key Assumptions**

- Discount rate – see next slide
- Development Trend
- Standard methodologies
- Data adjustments
- Anomalies
  - Large claims, new types of claims (e.g. EPL)
Discount Rate

Discount rate

– Impact on net assets
– Unwinding the discount – not adverse development
– Inherent risks
  • Not realizing the expected yield
  • Timing
  • Larger payouts
Material Adverse Deviation

Actuary states if he believes there is a risk of material adverse deviation (MAD)
The amount of MAD actuary judges to be material
Describe major factors or conditions underlying the risks that could contribute to MAD
Considerations of Materiality Standard

% of surplus
% of reserves
Multiples of net retained risk
Surplus drop below minimum capital requirement (RBC test)
Reinsurance considerations, collectability
Other factors
Q6. Do we have the liquidity to pay claims?
Liquidity

Is “cash” > claim payments + operating expenses

GASB requirement to split liabilities into:

- “Current liability” – amount of current outstanding liability expected to be paid out in the upcoming year
- “Long-term liability” – amount of current outstanding liability expected to be paid beyond the next year
Reinsurance Collectability

Report to reinsurer
  – Requirements: timeliness, size, type

Review reinsurance collectability
  – If entity exposed to uncollectable reinsurance, then recognize contingent liability

Evaluate reinsurance
  – From rating agencies, brokers, management
Risk Capacity

Entities may assume risk that is beyond their financial capacity

- Measured by financial ratio tests
- Tests are historical and retrospective – so evaluate qualitatively as well for future risks

Enterprise Risk Management
Catastrophic Risks
Q7. What is the financial big picture?
Financial Position

Test against target financial ratios
Surplus (net assets, or reserve fund) is key measure

CAFR perspective:
- Internal Service funds
- Enterprise funds
- Allocation to Departments
How Much Contingency (Reserve Fund)?

Set some key financial measure targets
- Premiums (aka contributions) to surplus
- Reserves to surplus
- Surplus to SIR
Premium-to-Surplus

Premium-to-surplus ratio well within usual range of less than 3:1
Loss Reserves-to-Surplus

Reserve-to-surplus ratio well within usual range for WC threshold of maximum 3 (to 4):1
Surplus-to-SIR ratio above 10:1
Threshold is at least 10:1

Able to withstand more large claims
(up to retention levels)
Seven Questions

- Does the data have integrity?
- Are the liabilities reasonable?
- Is the funding actuarially adequate?
- What are key or changes to assumptions
- What are the underlying trends?
- Do we have the liquidity to pay claims?
- What is the financial big picture?
In Summary

Actuarial reports provide
  – vital information on financial position of entity
  – provide insights into various trends
Results are *estimates* based on data, standards and judgment
Variability of estimates necessitates financial tests to ensure solidity
Understanding how all pieces fit is essential to making sound decisions
Seven Questions?

Thank you.

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Thank You!