Mergers & Acquisitions
Reserving in These Situations

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About the speakers

- Combined experience of over 60 transactions in the UK, Germany, Spain, Belgium, Poland, Sweden, Finland, Greece, Bermuda, Czech Republic

- Combined experience of over 30 years in reserving and related work

Overview of presentation

- Background to global marketplace

- Actuarial input into M&A situations

- Margins in reserves

- How to deal with data deficiencies

- Valuation of future business

- Mechanisms for resolving differences in valuations

The global marketplace : background

- M&A activity in global marketplace continues at a rapid pace

- Rating agency requirements for better capitalized and more highly rated organisations

- Cross-border activity as insurers seek global positioning, critical mass and expansion into immature markets

- Convergence within Financial Services sector continues (although repeal of Glass-Steagal Act in the USA has yet to bring about expected surge in bancassurance activity)

- M&A activity versus acquisition of new customer base via web-based start-ups

The global marketplace : some questions?

- Who will be the survivors as yet another round of consolidation takes place ?

- How will insurers avoid turning from hunter into the hunted ?

- How effectively and quickly can shareholder value be increased following a significant merger or acquisition ?

- How can companies best take advantage of the opportunities offered by differences in the regulatory framework across banks and insurers in different territories ?

- Can ART make us better equipped to exploit such opportunities ?

Types of transaction

- Acquisition

- Reverse take-over

- Merger

- Disposal

- Trade sale of portfolio in run-off

- Joint-venture

- Cross holdings

Underlying valuation principles broadly similar, with proviso that vendors are seeking maximum price and purchasers are looking for lowest price

Scope of actuarial work in a M&A situation

- Independent assessment of level of required outstanding claims reserves, differentiating between:-

  ▸ catastrophe claims and other large claims

  ▸ asbestos, environmental and other toxic tort exposures

  ▸ attritional losses

- May extend review to cover:-

  ▸ adequacy of unexpired risk reserves (particularly for classes of business with non-uniform earnings patterns)

  ▸ provisions for reinsurance bad debts (particularly where A&E and other toxic exposures exist)

  ▸ adequacy of provisions for ALAE's & ULAE's

Scope of actuarial work in a M&A situation (continued)

- ▶ a valuation of the future business (part of the goodwill of an insurer)

- ▶ assessment of equalisation reserves

- General support to Data Room exercise eg:-

  - ▶ review of business plans

  - ▶ assessment of management information & financial reporting functionality

  - ▶ benchmarking the target's against performance of competitors

- Vendor due diligence actuarial report increasingly seen as key item in Data Room (particularly if an external review)

Establishing margins in reserves

- Position may vary depending on whether advising vendor or purchaser

- Some parts of portfolio may be subject to great uncertainty - view as to size of margin required again depends on whether advising vendor or purchaser

- Special margin requirements - to protect against future emergence of currently unknown sources of claim types or adverse development of currently known claim sources

Establishing margins in reserves (continued)

- Data quality - margin required for greater level of subjectivity / uncertainty introduced by data of less than ideal quality

- Discounting - allowance for future investment income in establishing NAV. Need conservatism in rate of discount to allow for potential for adverse development. Need to consider if any explicit margins are required to compensate for the impact of removing the interest rate margin implicit in holding undiscounted provisions

Establishing margins in reserves (continued)

- In respect of data quality, required margins might be of the following orders of magnitude:-

	Illustrative
▸ Limited sub-divisions of data, but full history of reliable data available	2.5% - 5%
▸ Restricted history of reliable data, but all sub-divisions available	2.5% - 5%
▸ Restricted history of reliable data, with limited sub-divisions available	5% - 20%
▸ Less reliable data, but all sub-divisions available	5% - 20%
▸ Less reliable data, with limited sub-divisions available	15% - 40%

Establishing margins in reserves (continued)

Special Margin

▸ To protect against future emergence of currently unknown sources of claim types or adverse development of currently known claim sources eg. tobacco, EMF's etc

▸ Can use either deterministic or stochastic modelling techniques

▸ Deterministic techniques might comprise an analysis of the frequency and severity of medium-sized latent/unforeseen claims sources emerging in the last 10 years and extrapolating forward

▸ Stochastic techniques might involve Monte Carlo simulation techniques operating on sampled loss severity and frequency distributions for latent claims

Establishing margins in reserves (continued)

Consider against ranges of "reasonably possible" outturns around best estimates. Using Mack's method and/or simulation techniques might produce the following illustrative ranges:-

	Illustrative upper bound
Latent claims reserves <10% of total, long-tail reserves<30% of total	+10%
Latent claims reserves <10% of total, long-tail reserves>30% of total	+15%
Latent claims reserves <10% of total, long-tail reserves>60% of total	+30%
Latent claims reserves >10% of total	+30%
Latent claims reserves >30% of total	+50%
Latent claims reserves >50% of total	+75%

Potential "Black Holes"

- A&E and other toxic torts

- US casualty business and 'problem' treaty cedants

- Catastrophe losses

- Inwards retrocessional reinsurance

- Reinsurance exhaustion / non-recoverability

- Run-off reinsurance contracts

- Sue & labour

- Potential for new, currently unanticipated latents

- Tabacco / EMF ?

- Legislator / judicially induced changes

- Financial reinsurances

Data requirements for a reserving exercise : "ideal world"

- Complete data triangulations to full run-off (including numbers of claims, differentiating between open and closed claims, as far as possible). It is also useful to consider numbers closed at some cost versus those at zero cost

- Premium and other relevant exposure information (eg. vehicle years)

- Ability to split out:-

  ▸ sub-classes of business

  ▸ problem contracts / cedants

  ▸ large losses and catastrophe losses

  ▸ A&E and other toxic tort exposures

Data requirements for a reserving exercise : "ideal world" (continued)

- Exposure-based information for A&E and other toxic tort exposures, as well as immature catastrophes

- Gross and net of reinsurance information, with details of changes in reinsurance protections over time

- Net of reinsurance information to be on basis of 100% reinsurance recoverability

- Detailed information on nature of business underwritten and changes in mix of business over time

What if "perfect data" isn't available ?
- Example 1

A&E and other toxic exposures cannot be identified separately from other claims

Possible approaches:-

- Use RAA or other industry statistics (including A&E losses) to derive benchmark loadings

- Use multiples of (average) incremental incurred developments over last few years to generate IBNR reserve requirement

- Apply benchmark IBNR : OS loadings derived from other insurers / own experience (where exposure-based techniques have been utilised), allowing for differences in nature of business underwritten

What if "perfect data" isn't available ?
- Example 1 (continued)

- May need to introduce margin to reflect increased level of uncertainty or use mechanism to protect against potential downside

- Review developments at the individual losses or accounts level on an empirical basis to identify unusual occurrences

What if "perfect data" isn't available ?
- Example 2

Triangulated data is incomplete : only last 5 calendar year-ends of history available for earlier years of account

Possible approaches:-

- Apply RAA or other industry statistics (eg cdf's) to cumulative paid or incurred claims position (if available) or IBNR : OS loadings to case reserves at latest evaluation date

- Use curve-fitting techniques or decay techniques to extrapolate limited history of claims

- Apply benchmark multiples of average incremental incurred claims amounts over recent past

- May need to introduce margin to reflect increased level of uncertainty or use mechanism to protect against potential downside

What if "perfect data" isn't available ?
- Example 3

Only paid claims information is available for long-tail accounts

Supplement paid claims projections with:-

- Benchmark cdf's derived from incurred claims projections of similar accounts elsewhere in market (or via RAA statistics etc)

- Loss ratio techniques / B-F techniques, leveraging wider market knowledge wherever possible

- May need to introduce margin to reflect increased level of uncertainty or use mechanism to protect against potential downside

- Consider ratios of paid to incurred claims and then benchmark against other data

- Utilise published regulatory data to refine one's own estimates

What if "perfect data" isn't available ? - Example 4

Only gross historical data is available plus net position as at most recent evaluation date

Possible approaches:-

- Apply net notified OS : gross notified OS ratio at latest evaluation date to estimated gross IBNR reserve requirement (conservative ?)

- Attempt to interpolate gross : net ratios across development periods, allowing subjectively for changes in nature of reinsurance programme over time and known large losses (less conservative)

What if "perfect data" isn't available ?
- Example 5

Historical data to full run-off is not available

Possible approaches to identifying appropriate tail factors:-

- Curve-fitting or decay techniques applied to cumulative data

- Benchmark tail factors derived from:-

  ▸ similar books of business elsewhere in market (eg from regulatory returns)

  ▸ RAA or other market statistics

- May need to introduce margin to reflect increased level of uncertainty or use mechanism to protect against potential downside

What if "perfect data" isn't available ?
- Example 6

No exposure-based information is available in respect of APH liabilities

Possible approaches:-

- Apply benchmark IBNR : OS loadings derived from other insurers / own experience (where exposure-based techniques have been utilised), allowing for differences in nature of business underwritten

- Apply survival ratios derived from other similar insurers in the market

- Compare strength of IBNR & case reserves to comparable insurers per AM Best studies & 1OK filings

What if "perfect data" isn't available ? - Example 6 (continued)

- Utilise exposure details available from inwards writings of target company's reinsurers to gain idea of levels of writings and years of coverage

- May need to introduce margin to reflect increased level of uncertainty or use mechanism to protect against potential downside

Valuation of future business

Future cash flow from one year's future business

= Premiums written

– Commission paid

– Claims paid

– Expenses

– Taxation

+ Investment income earned on technical provisions held

One year's future business will reflect:-

▸ renewals of existing business } levels depend on strength
▸ new business   } of brand & management team

Valuation of future business (continued)

The Net Present Value of the cash flows generated by each future year's renewing and new business = value of future business

Deterministic valuation models include the following:-

- A simple multiple of the NPV of the future cash flows arising from next year's underwriting (eg. 3)

- Modeling each of the next, say, 5 years separately, allowing for:-

  ▸ market cycles for each class of business

  ▸ impact of changes in distribution channels

  ▸ expectations of movements in future investment yields

Valuation of future business (continued)

Stochastic models

- Give a range of NPVs about the best estimate via simulations reflecting variability of:-

  ▸ loss ratios

  ▸ catastrophe and other 'shock' losses

  ▸ investment returns by type of asset

  ▸ new business growth levels

  ▸ renewal levels

- Parameterisation is a lengthy process, so using such models may not be viable if timetables are very tight

Valuation of future business (continued)

Information & Data Requirements

- Claims payment and premium receipt patterns

- Revenue account information by class of business

- Details of historical new business volumes and lapse rates

- 3 year or 5 year business plan highlighting:-

  ‣ forecast loss ratios

  ‣ forecast expense ratios

  ‣ forecast premium volume growth / contraction

  ‣ forecast volumes of new business

- Details of historical investment returns and details of mix of asset portfolio
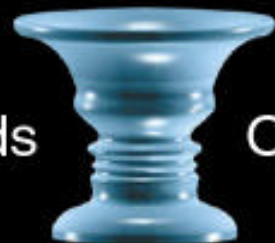
Methods of resolving differences in view

- Warranty on claims reserves : vendor makes up any subsequent shortfall in reserves (vendor retains right to audit claims files)

- Escrow account : amount representing difference in view on level of reserve requirements placed on deposit in a trust for specified period of time to fund any potential emergence of reserve shortfall. At end of specified period, balance of account + investment income reverts to vendor

Methods of resolving differences in view (continued)

- Run-off reinsurance contract from third party:-

  ▸ may be unlimited or subject to a high limit

  ▸ arrangement requires disclosure of proposed transaction, therefore not always desirable

- "Split the difference"

- Other tools

- "Drop hands"

- Cyber Settlement

Your worlds   Our people