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Underwriting and Actuarial Consulting, Training and Research

# Pricing Actuaries – Adding Value in a Soft~~ening~~ Market

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# Background

- **Focus**
  - Commercial P&C insurance
  - London Market business
- **Pre-2001 – Who needs actuaries?**
  - Few P&C pricing actuaries
  - Mostly reinsurance
  - Main role individual risk pricing
- **2002 & Post – Actuaries as safeguard**
  - High demand for pricing actuaries
  - Today only 6-7 LM companies no actuaries

# The Role of Pricing Actuaries

## Reinsurance

- Account pricing
- Underwriting
- Management reporting
- Benchmarking

## Insurance

- Account pricing
- Rating models
- Management reporting
- Outwards reinsurance
- Reserving
- Capital modelling
- Planning and Forecasting

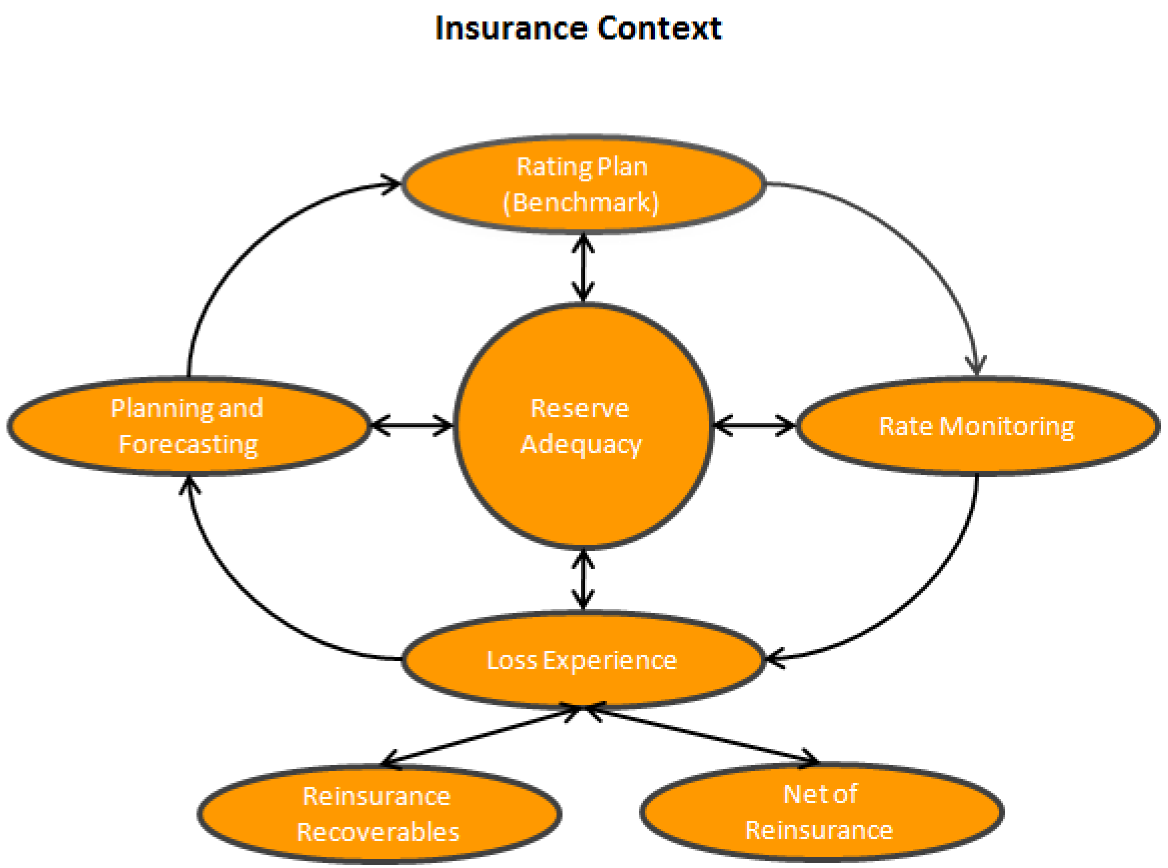
# Would Actuaries Influence Results In This Soft Market?

**Key Question:**

*Would companies with pricing actuaries do better than those without pricing actuaries?*

- History yet to prove
- Last soft market
  - CO's without actuaries failed
  - CO's with large pricing teams failed
- What could we do different this time?

# It All Comes Down to Reserves



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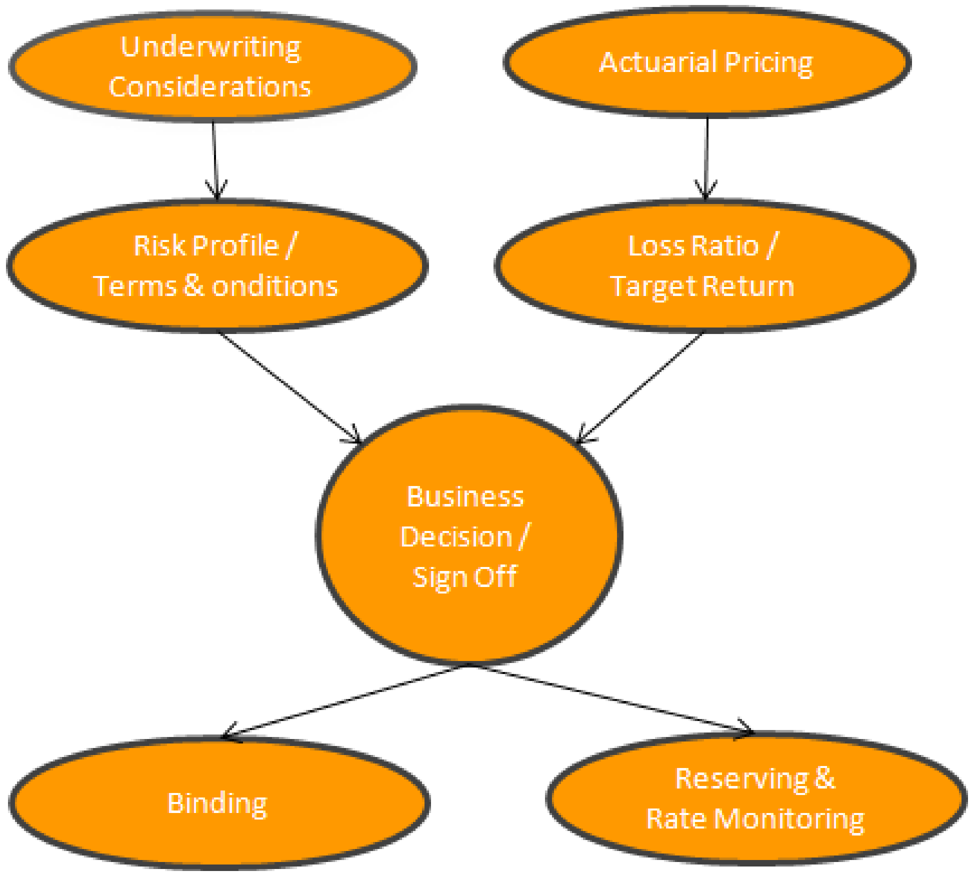
# It All Comes Down to Reserves

**Reinsurance Context**



# Who's Decision Is It Anyway?

- Binding individual risks
- Benchmarks
- Rating plans
- Rate monitoring
- Held reserves
- Plan loss ratios

# Individual Risk Pricing

- Common actuarial sign off protocols
  - No sign off
  - Premium threshold
  - Risk type
- Who has final say?
- Who should have final say?
- Proportion of premium priced
- Where are results reflected?

# Rating Models or Rating Tools?

- Increased need for rating tools
  - Ease of workflow
  - Automated calculations
  - Documentation
  - Lloyd’s reporting requirements
- Rating model – actuarial value
- Rating tool – IT value

# Rating Models or Rating Tools?

- Goal – consistent benchmark
  - Objective rate monitoring
  - Market price vs. benchmark
- Rating database
- Link rating plan to loss ratio
- Develop technical rates

# Renewal Rate Monitoring

- Process in place 2002 and post
- Distinct difference
  - Good process – run by actuaries
  - Accuracy – calculated by underwriters
- What is included?
  - Change exposure
  - Change limit / attachment
  - Other rating factors
  - “Soft issues”

# Renewal Rate Monitoring: The Need for Actuarial Accuracy

Rate Monitoring Using Exposure Changes

**Benchmark premium assumes 20% commission**

| Min in Range | Max in Range | Max Premium in Range | Implied Load Per Million |
|---|---|---|---|
| 0 | 1,000,000 | 46,750 | 46,750.00 |
| 1,000,001 | 5,000,000 | 60,775 | 3,506.25 |
| 5,000,001 | 25,000,000 | 100,775 | 2,000.00 |
| 25,000,001 | 50,000,000 | 138,275 | 1,500.00 |
| 50,000,001 | 100,000,000 | 183,275 | 900.00 |
| 100,000,001 | 200,000,000 | 233,275 | 500.00 |
| 200,000,001 | 500,000,000 | 308,275 | 250.00 |
| 500,000,001 | 1,000,000,000 | 358,275 | 100.00 |
| 1,000,000,001 | 2,000,000,000 | 408,275 | 50.00 |
| 2,000,000,001 | 5,000,000,000 | 498,275 | 30.00 |
| 5,000,000,001 | 10,000,000,000 | 548,275 | 10.00 |
| 10,000,000,001 | 15,000,000,000 | 585,775 | 7.50 |
| 15,000,000,000 | Unlimited | | 5.00 |

| | Expiring (2007) | Renewal (2008) | Change |
|---|---|---|---|
| Turnover | 150,000,000 | 250,000,000 | 18.01% |
| Deductible | 50,000 | 50,000 | 0.00% |
| Deductible Factor | 0.8 | 0.8 | 0.00% |
| Limit | 10,000,000 | 15,000,000 | |
| Attachment | 10,000,000 | 15,000,000 | |
| Excess Factor | 1.50 | 2.00 | 33.33% |
| Commission | 20% | 20% | |
| Benchmark Gross Premium | 249,930 | 393,240 | 57.34% |
| Benchmark Net Premium | 199,944 | 314,592 | 57.34% |
| | | | |
| Bound Gross Premium | 275,000 | 395,000 | 43.64% |
| Bound Net Premium | 220,000 | 316,000 | 43.64% |
| Change in T&C | | | 5% |

Rate change = -13.06%

Answers = -13% to -27%



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# Renewal Rate Monitoring

- Soft issues
  - Risk management
  - Claims experience
  - Size discounts – if appropriate include in benchmark
  - Terms and conditions
- Trends
  - Understated in hard market
  - Overstated in soft market

# Renewal Rate Monitoring

- Rate monitoring
  - Highly linked to reserve (in)adequacy
  - Main input for plan loss ratio
- Include only objective measures
- Soft issues
  - Market dependent factors
  - Treat as rate change

# New Business Monitoring: The Myth

Why is new business rarely monitored?

Going Soft by Stewart Mitchell, The Actuary Magazine, 1/3/2008

"[...] *In practice it is easier to ignore new business because details of the previous year's risk may be incomplete. However, new business is typically written on worse terms than renewal business since the business needs to be attracted from the previous insurer, usually by offering a lower price or better terms."*

# New Business Monitoring
# The Reality

- Expiring price is irrelevant
- Monitor
  - Renewal business to benchmark
  - New business to benchmark
- New business rate index

$$\text{New Bus. RI} = (1 - \text{Ren. Rate Change}) * \frac{\text{New To Benchmark}}{\text{Renewal To Benchmark}}$$

- Use new and renewal premium as weights



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# New Business Monitoring Considerations

- New business premium volume
- Rate change applied to ***<u>all</u>*** premium
- Extreme case – no renewals all new business
  - Rate monitoring 0%
- Result
  - Significant under-reserving



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# Rate Monitoring Considerations

- Rate change “seen” as target
- Target often “achieved”
- Underwriters’ perceptions
  - Rate increase = good
  - Rate decrease = bad
- Not linked to rate adequacy
- Not linked to loss experience

# Rate Monitoring Considerations

## Assesing rate adequacy for various business segments

Target rate change = -10%

Achieved results at 1/7/2008

| Industry Trade | 2007 Written Premium | 2008 Renewal Premium | 2008 Renewal To Benchmark | 2008New Premium | New To Benchmark | Renewal Rate Change | Projected Loss Ratio |
|---|---|---|---|---|---|---|---|
| 1 | 1,625,000 | 1,523,000 | 1.050 | 254,800 | 0.990 | -5.00% | 89% |
| 2 | 2,365,000 | 2,548,900 | 0.956 | 1,058,000 | 0.925 | 0.00% | 100% |
| 3 | 116,000 | 115,240 | 0.975 | 523,000 | 0.900 | -1.00% | 75% |
| 4 | 3,856,000 | 3,658,900 | 1.030 | 1,254,666 | 1.000 | -5.00% | 55% |
| 5 | 5,648,000 | 3,589,250 | 0.900 | 958,700 | 0.950 | -10.00% | 35% |
| 6 | 8,650,000 | 5,894,500 | 0.850 | 854,000 | 0.900 | -15.00% | 45% |
| 7 | 1,548,000 | 1,452,000 | 1.050 | 752,000 | 0.950 | -5.00% | 76% |
| 8 | 7,152,000 | 6,987,500 | 0.950 | 3,598,000 | 1.000 | -7.50% | 95% |
| Total | 30,960,000 | 25,769,290 | | 9,253,166 | | -8.38% | 69% |



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# Rate Monitoring Actuarial Value

- Take “fear” out of rate monitoring
- Think rate adequacy
- Regular rate reviews
  - By industry/class
  - By territory
  - By size
- Business strategy
  - Profitable growth



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# Planning and Forecasting

- Plan 4-6 months before year end
- Difficult to plan next month!
- Optimistic assumptions
- Recent 3-4 years booked at plan
- Compound effect
  - Optimistic rate monitoring
  - Low pegs
  - No new business rate index

# Impact of Plan on Reserves

| Year | Plan RC | Plan LR | Actual RC | Revised LR |
|---|---|---|---|---|
| 2009 | 5% | 81.5% | -7.5% | 92.5% |
| 2010 | 5% | 84.8% | -5% | 93.7% |
| 2011 | 5% | 95.2% | -5% | 105% |

- Further impact
  - Actual RC accuracy
  - New business monitoring



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# Would Actuaries Influence Results?

- Time will tell
- Reputational risk
- Pricing role evolving
- Come out of the bench
  - Ask questions (lots and lots of questions!)
  - Get involved
- Value added
  - Impact on company’s reserves
  - Management reports
  - Company business strategy