



**Actuaries
Institute**

Insights

Introduction to Life Insurance Pricing

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15th March 2018

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Introduction to Life Insurance Pricing

Group Pricing discipline

Damian Thornley, 15th March 2018

Summary

- A week in the life of a Group Pricing Actuary.
- Important aspects Group Pricing discipline.
- Career Tips / Culture.

A week in a life....

- Preparing reports / analysis.
- Liaising with Appointed Actuary or her representatives.
- Presenting to senior delegated authority holders in LifeCo to obtain approvals.



A week in a life....

- Interacting / research with product / claims function to understand analyse some feature of the insurance product.
- Working together with Account Managers / Business Development to prepare presentations for client.



Group Pricing methods

- Data – hopefully lots of it and good.
- Interpreting trends / changes in claims experience.
- Understanding Product.
- Measuring claims cost / many different rating factors – not always properly captured or analysed.
- Credibility Theory $(z = \sqrt{ENC/100})$?!

Group Pricing

- Role of Pricing Actuary;
- ...to maximise marginal profits – see Robinson 2007.
- Frontline LifeCo Risk Mgmt role.
- Ensure sustainable underwriting results.
- **Comments on PS200**
- 6.2.5 “... must consider the degree of uncertainty in each of the assumptions and the potential effects of experience being relatively adverse.”
- 6.3.1 “...must consider all policy terms and conditions.”

Example: Your LifeCo quoting on a new group arrangement with a TPD defn. that your Company has not previously managed.

Career Tips

- Claims function.
 - Get Familiar.
- Communication.
 - Clear and concise.
 - What are the three key messages ?



References

- “Pricing Wealth Products in Competitive Markets” ~ Robinson 2007.

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Introduction to Life Insurance Pricing

Price Setting – Individual products
Andrew Parker, 15th March 2018

Summary

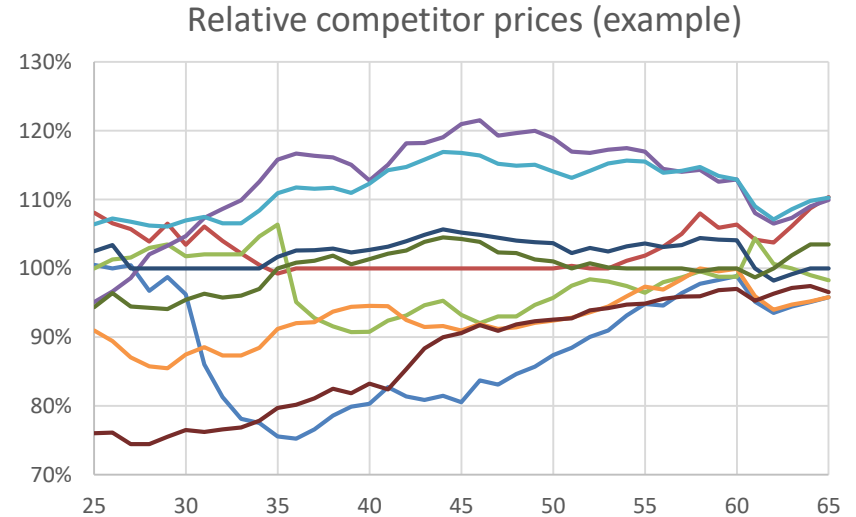
- Price Setting for a new product
 - Important initial steps
 - Market environment
 - Profit testing
 - Outputs and premium rates

Important initial steps

- Understand the product
 - Benefits, features, eligibility,...
 - Underwriting approach
 - Available pricing factors
- Marketing approach / Customer
 - Who is the intended customer
 - How are customers reached
- Pricing strategy in relation to broader business strategy
 - Future direction of the company
 - Impact on existing products
 - Acceptable cross-subsidies
 - Target profitability and key measures

Market environment

- What will this product compete with
- Who are key competitors
- How will the product compete
- What is the target competitive position
- Initial rates guess



Profit testing model

- Required level of complexity
- What are the required outputs
- What are the relevant assumptions to model
 - Claims
 - Lapses
 - Sales
 - Economic
 - Expenses
 - Sales costs
- Assumption setting
 - Pricing basis v other bases
 - Experience
 - Reinsurer
 - Product differences
 - Competitive positioning

Outputs and premium rates

- Test initial rates
- Iterate

- Test sensitivity to unknowns

- Ongoing communication
 - Not just at the end
 - Many stakeholders

Intro to Reinsurance Pricing

Adrian Fortescue



What ?

Reinsurance is the Insurance for Insurers

Types of reinsurance are Proportional, Non-Proportional, Excess of loss, Catastrophe



Why ?

Reduce volatility

Provide capital

Provide expertise – Underwriting, Claims, Pricing and Product

Mature vs Emerging markets

Who?

Financial year ending 31 December 2016 (\$ mill)								
Life insurer	GEN Re	Hannover	Munich Re	Pac Life Re	RGA	Scor Re	Swiss Re	Total
Net policy revenue	262	488	534	120	593	81	1,100	3,179
Investment revenue	20	59	87	2	42	6	83	299
Other revenue	0	-0	2	13	87	4	3	110
Total revenue	283	547	623	135	723	91	1,186	3,588
Net policy expenses	213	97	276	40	481	31	615	1,752
Operating expenses	37	263	588	35	217	46	306	1,493
Movmt in net policy liabs	-3	165	-444	59	33	10	44	-136
Other expenses	4	0	32	1	-0	0	0	37
Total expenses	250	525	452	135	730	87	965	3,146
Tax	10	19	19	0	3	1	58	110
Net profit after tax 2016	23	2	152	0	-10	3	162	332
Net profit after tax 2015	12	3	-17	-12	-24	-2	62	22

Risk pricing – mature market

- The pricing of risk between an insurer and reinsurer will ‘hopefully’ be the same
- Reinsurer ‘may’ have more expertise
- Differences would relate to capital required, cost of capital and any other funding arrangements

$${}_t h \bar{V}^{(m)} \left(\bar{A}_{xy:\overline{n}|}^1 \right)$$

Quote with and without Reinsurance

	Insurer	Assumptions
Premium	100.0	
Claims	80.0	
Expenses	8.5	
Commission	0.0	0.0%
Cost of Capital	2.8	5.0%
Tax	2.6	30.0%
Net Profit	6.1	
Capital	55	
RoC	11.1%	

	Insurer	Reinsurer	Total	Assumptions
Premium	50.0	50.0	100	
Claims	40.0	40.0	80.0	
Expenses	7.0	1.5	8.5	
Commission	-3.5	3.5	0.0	7.0%
Cost of Capital	1.4	1.1	2.5	5.0%
Tax	1.5	1.2	2.7	30.0%
Net Profit	3.6	2.7	6.3	
Capital	27.5	22.5*	50	
RoC	13.0%	12.1%	12.6%	

**Illustration purposes may have lower capital and/or lower cost of capital*

Why?

Insurer

- Increased Premium contribution from commission
- Potentially less expenses (can leverage reinsurer services)

Reinsurer

- Potentially Lower capital cost i.e.
 - diversification benefits
 - Retro structures
 - Able to access capital at a lower cost
- Expenses lower due to global scale

Reduce price - Same return

	Insurer	Assumptions
Premium	100	
Claims	80.0	
Expenses	8.5	
Commission	0.0	0.0%
Cost of Capital	2.8	5.0%
Tax	2.6	30.0%
Net Profit	6.1	
Capital	55	
RoE	11.1%	

	Insurer	Reinsurer	Assumptions
Premium	49.3	49.3	-1.4%
Claims	40.0	40.0	
Expenses	7.0	1.5	
Commission	-3.5	3.5	7.0%
Cost of capital	1.4	1.1	5.0%
Tax	1.3	1.0	30.0%
Net Profit	3.1	2.3	
Capital	27.5	22.5	
RoE	11.1%	10.0%	



AMP Reinsurance Deal

Releasing approximately A\$500 million in capital from AMP Life, the new reinsurance agreements include:

- A new quota share agreement with General Reinsurance Life Australia Limited (Gen Re) to cover 60 per cent of the NMLA retail portfolio
- An extension to the existing agreement with Munich Reinsurance Company of Australasia Limited (Munich Re) to cover 60 per cent (up from 50 per cent) of the AMP Life retail portfolio.
- A new surplus cover agreement with Gen Re to assist in managing risk and volatility in individual retail claims.

The new reinsurance agreements will commence on 1 November 2017 and means 65 per cent of AMP's retail life insurance portfolio will be reinsured for claims incurred from 1 November 2017.

Source - AMP Media release 10 August 2017

 OnePath**ZURICH**[®]

Zurich Acquisition of Onepath Life

- Zurich enters agreement to acquire Onepath
- The sale is comprised of two transactions with total proceeds of \$2.85 billion, inclusive of \$1 billion of upfront reinsurance commission from Zurich.
- Following completion, Zurich will be Australia's largest retail life insurer as measured by in-force premiums with more than 1.5 million customers

Source - ANZ News release 12 december 2017

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