Institute of Actuaries of India
3rd Capacity Building Seminar on Health Care Insurance
Gurgaon, 26 August, 2015

Pricing-related matters in Health Insurance

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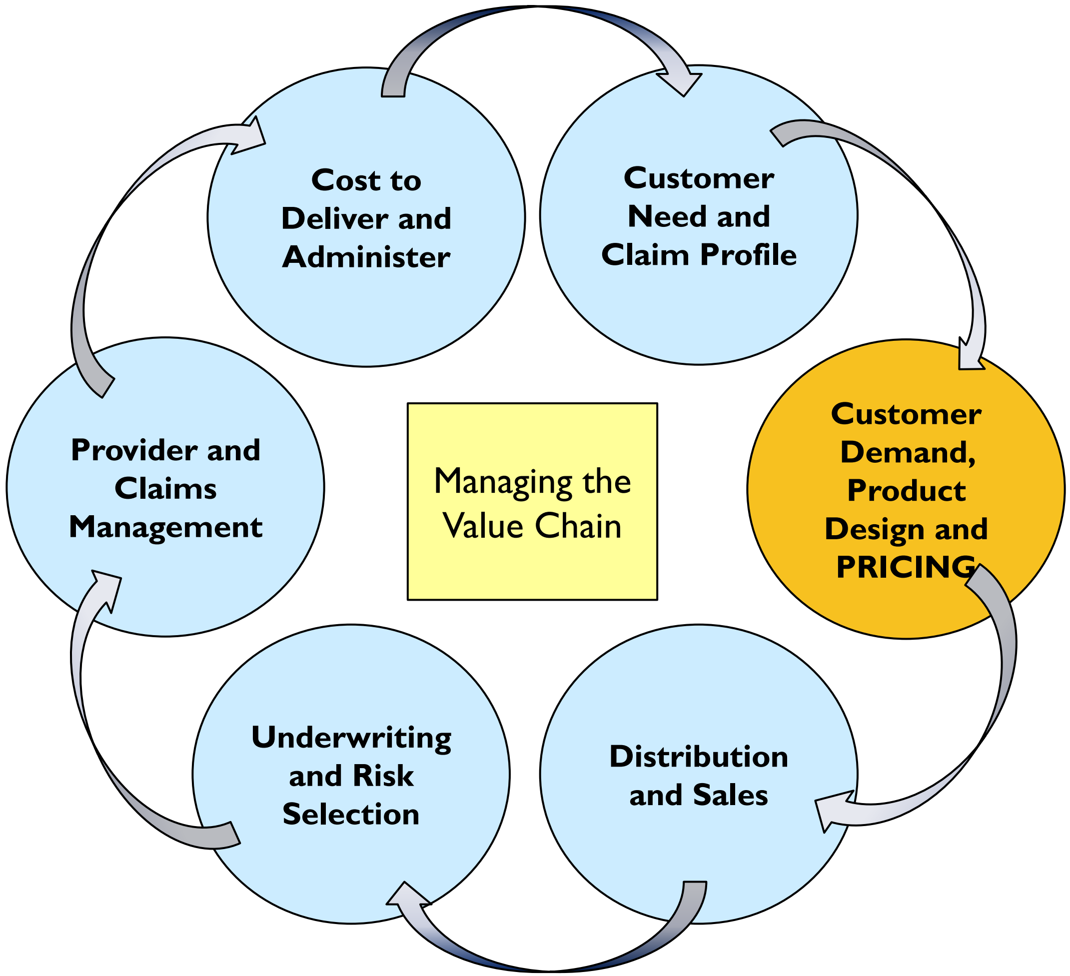
Health insurance business cycle



Q: What is the ‘correct’ price for a health insurance cover?

What is the ‘correct’ price for a health insurance cover?

- *Expected Claims Cost* for a particular rating cell + *Expense Allowance* + *Profit Loading ?*
- As above, but considering a weighted average price at product or portfolio level ?
- Optimal price to maximise portfolio profitability, allowing for secondary effects such as competitive positioning, price elasticity, lapse sensitivity, etc ?
- ‘Sustainable’ price level, consistent with expected future development of the portfolio, anticipating maturation of average policy duration, future medical (claims) trend and anticipated future rating actions ?

Medical (claims cost) trend

- “Medical Inflation”
  - Claim Incidence
    - Demand: health expectations / new treatment options
    - Supply: provider infrastructure / fee-for-service model
    - Risk factor mix within premium rating cells
  - Cost per Service
    - General price / wage inflation
    - Treatment setting
    - Provider contracting
    - Treatment substitution

- Product design
  - Role of cost sharing in modifying benefit consumption
  - Leveraging effect of deductibles
  - Deleveraging effect of low benefit limits

A simple portfolio model ....

NEW BUSINESS

Yr. of Operations	NB Growth Rate
1	
2	100%
3	80%
4	40%
5+	20%

LAPSES

Policy Year	Persistency Rate
1	75%
2	85%
3+	90%

CLAIMS

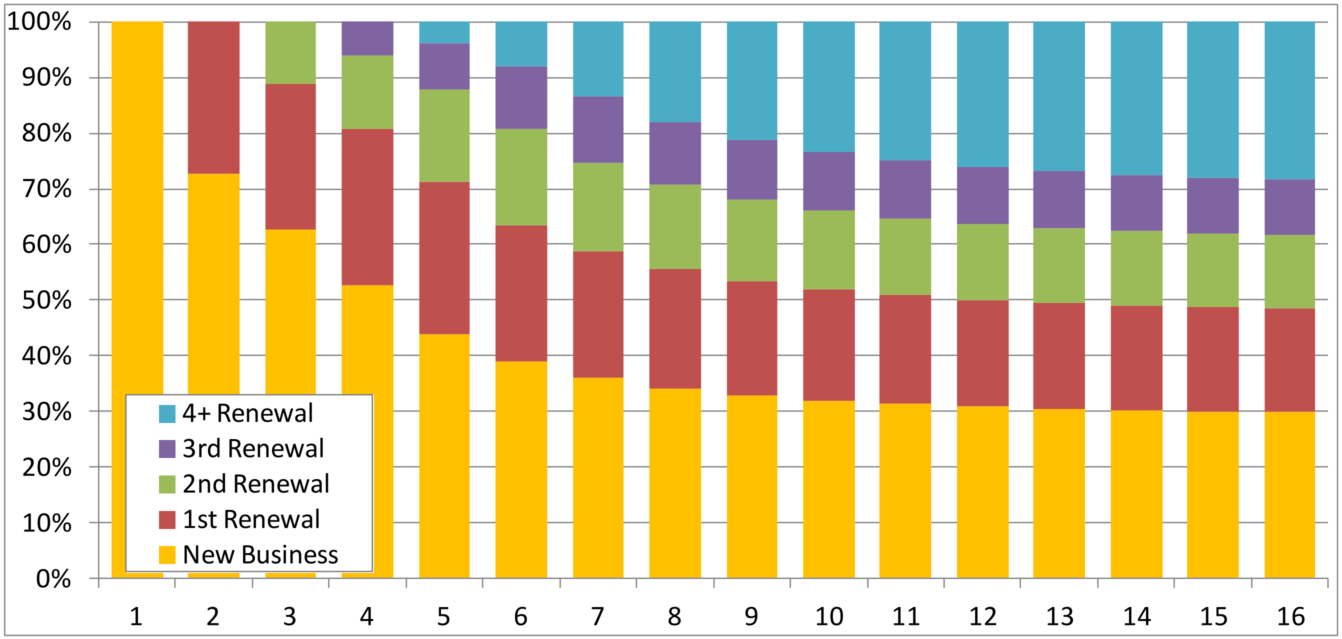
Policy Year	Claims Cost (% of Ult.)
1	50%
2	70%
3	90%
4	95%
5+	100%

MEDICAL (CLAIMS) TREND

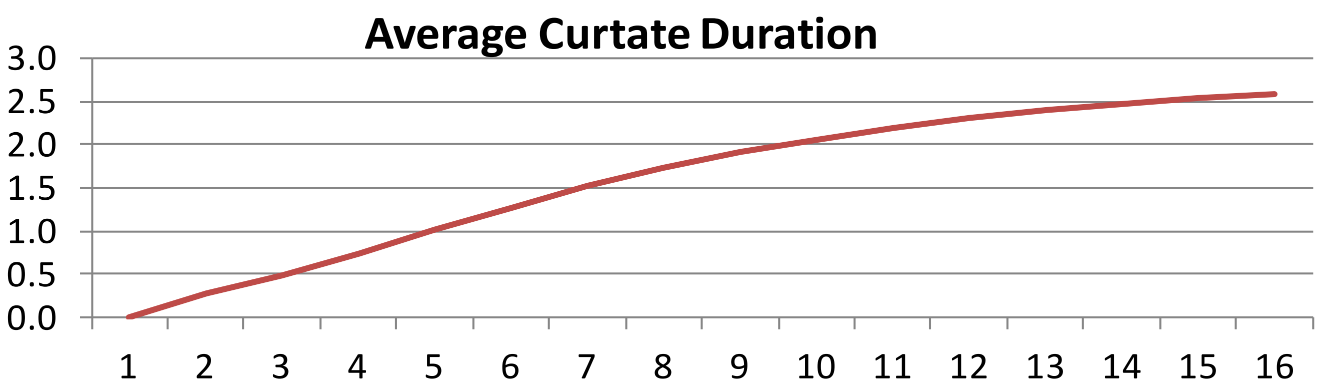
Yr. of Operations	Medical Trend
[All]	10%

Portfolio composition stabilises over time

Exposure as % of Portfolio



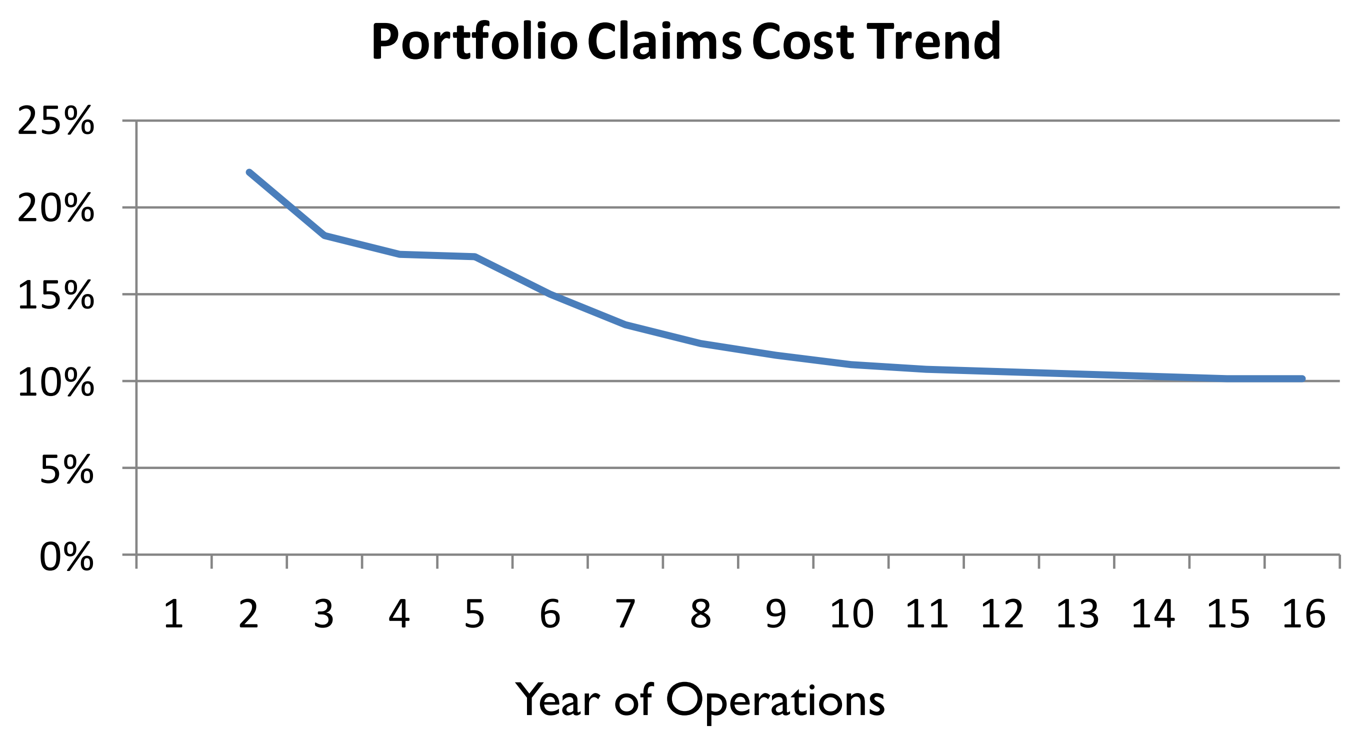
Year of Operations



Portfolio claims cost trend outpaces the underlying medical trend rate

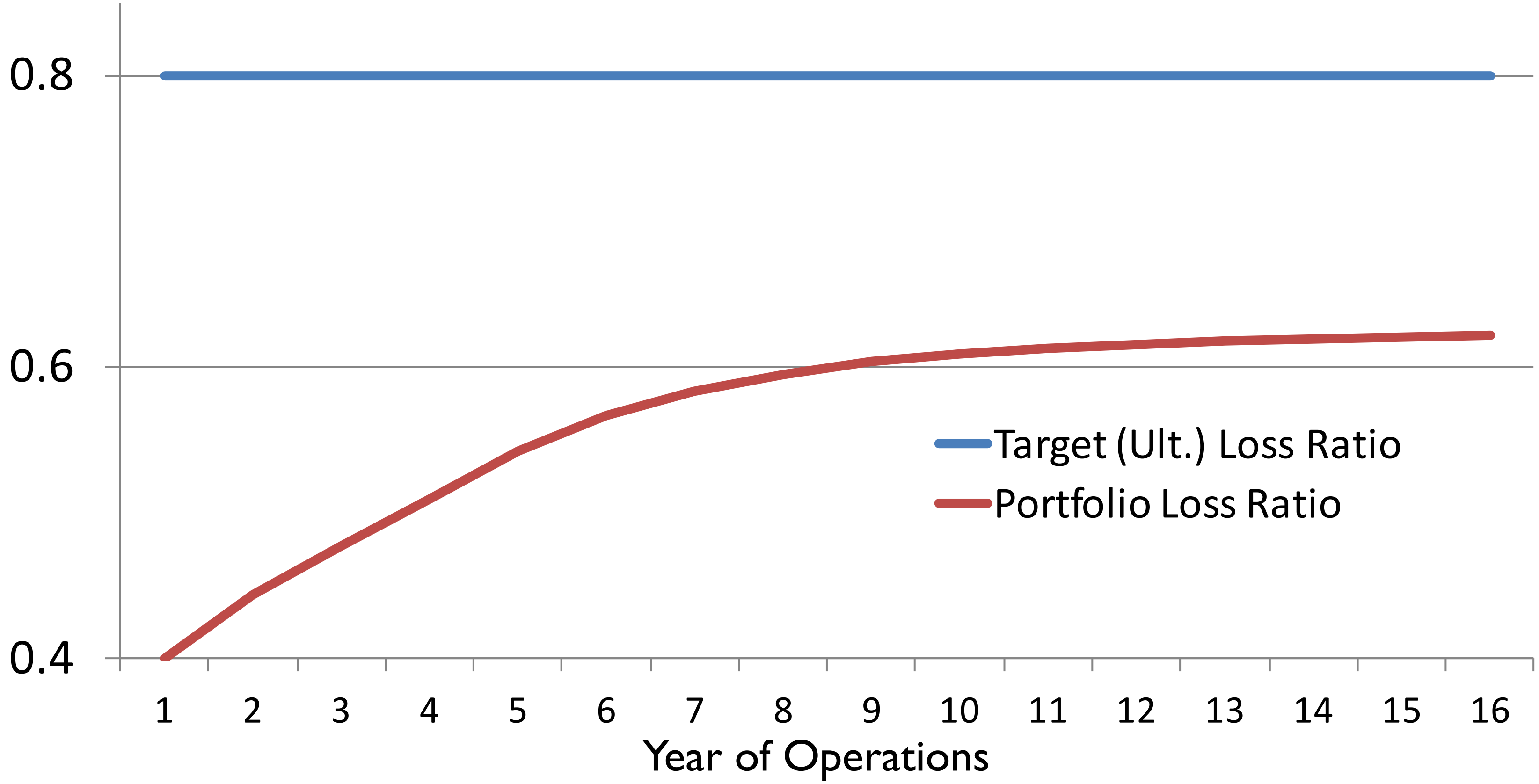
MEDICAL (CLAIMS) TREND

Yr. of Operations	Medical Trend
[All]	10%



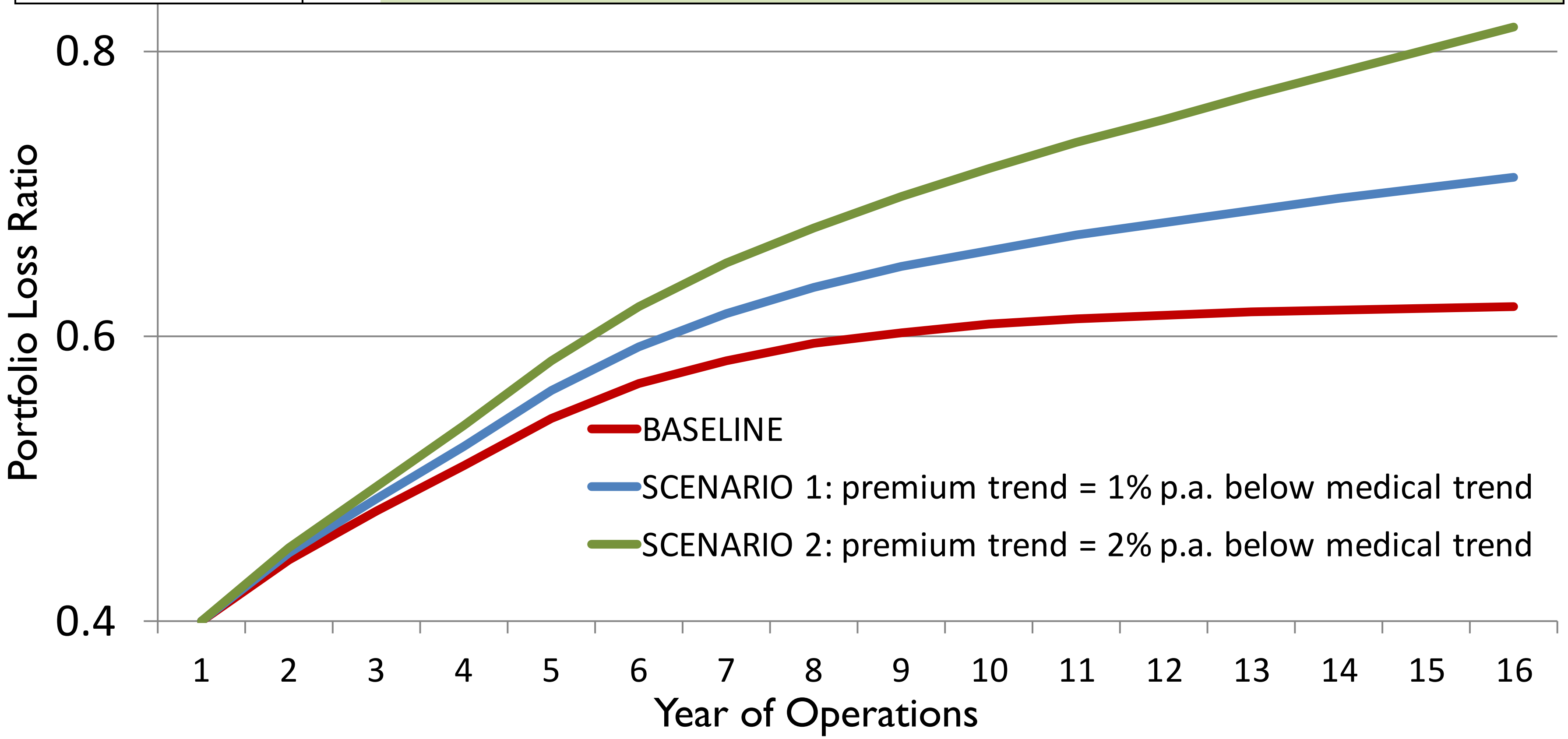
Portfolio loss ratio tends to steady state reflecting the profile by policy duration

Yr. of Operations	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Medical (Claims) Trend		10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
Premium Trend		10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%



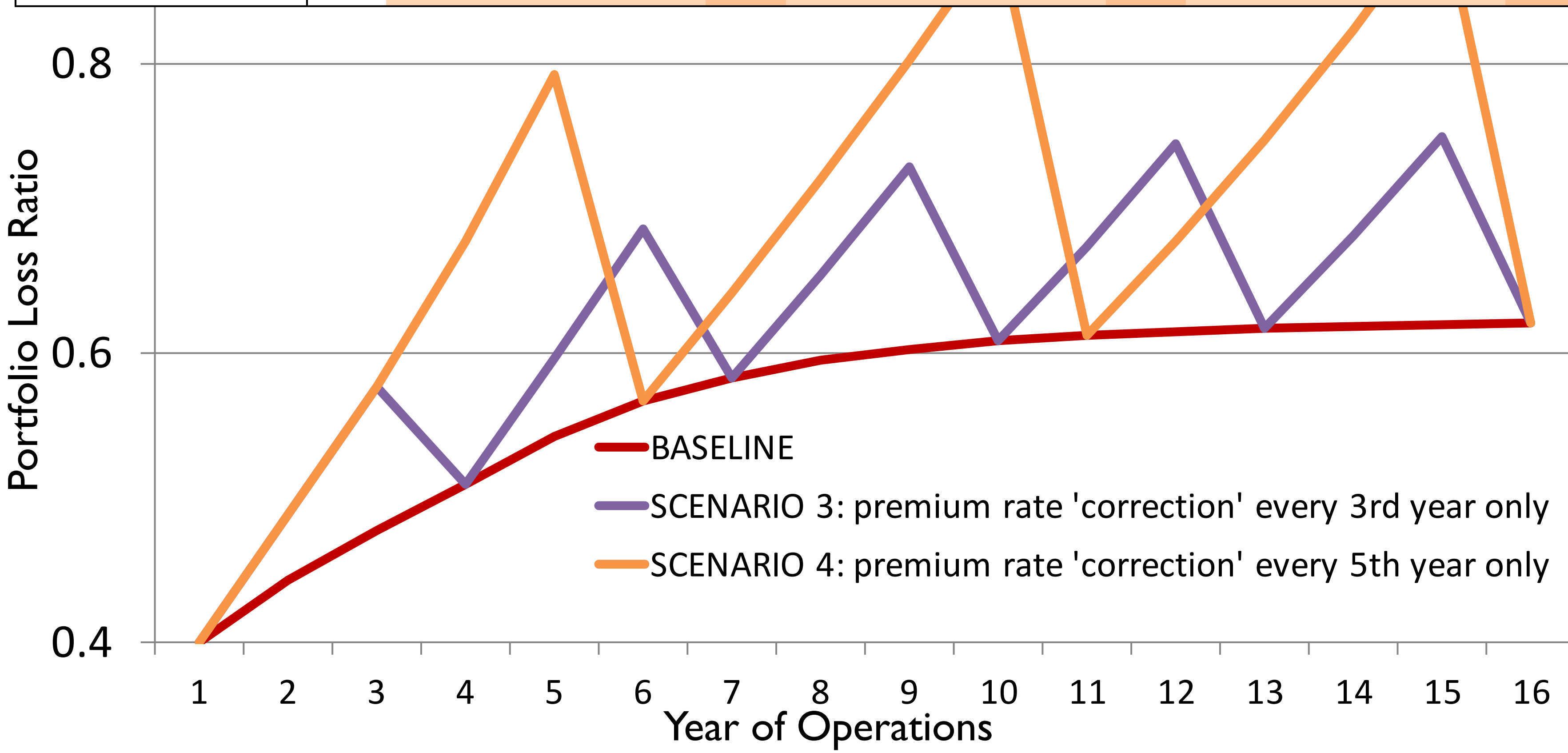
Portfolio loss ratio suffers if premium trend fails to keep pace with claims cost trend

Yr. of Operations	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Medical (Claims) Trend		10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
BASELINE		10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
SCENARIO 1		9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%
SCENARIO 2		8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%



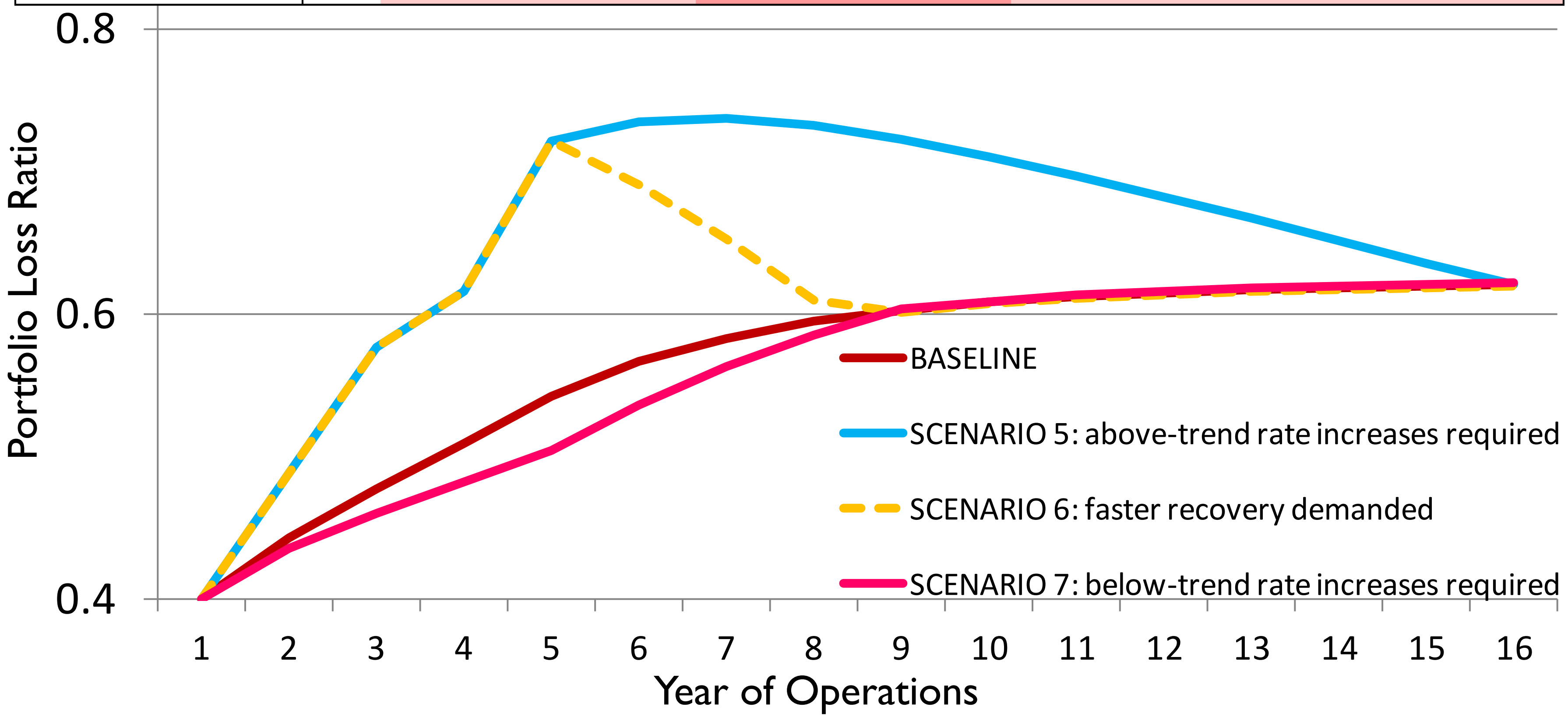
Infrequent premium rate revision can lead to unstable progression of the portfolio loss ratio

Yr. of Operations	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Medical (Claims) Trend		10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
BASELINE		10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
SCENARIO 3		0%	0%	**33%**	0%	0%	**33%**	0%	0%	**33%**	0%	0%	**33%**	0%	0%	**33%**
SCENARIO 4		0%	0%	0%	0%	**61%**	0%	0%	0%	0%	**61%**	0%	0%	0%	0%	**61%**



Corrective rate increases allow the target loss ratio trajectory to be regained

Yr. of Operations	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Medical (Claims) Trend		10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
BASELINE		10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
SCENARIO 5		0%	0%	10%	0%	**13%**	**13%**	**13%**	**13%**	**13%**	**13%**	**13%**	**13%**	**13%**	**13%**	**13%**
SCENARIO 6		0%	0%	10%	0%	**20%**	**20%**	**20%**	**13%**	10%	10%	10%	10%	10%	10%	10%
SCENARIO 7		12%	12%	12%	12%	**8%**	**8%**	**8%**	**8%**	10%	10%	10%	10%	10%	10%	10%



Interesting, but why does all of this matter?

- Portfolio will inevitably mature; cannot rely on new business to sustain early years' loss ratios.
- Portfolio performance is vulnerable to changes in new business growth rates and persistency rates.
- It may not be obvious whether an immature portfolio is performing above or below the smooth (Baseline) trajectory towards long-term sustainability.
- Premium rating actions cannot be considered in isolation and may have secondary effects, e.g.
  - selective lapses / persistency
  - 'buy-down' of benefits at renewal
  - impact on competitive position / new business sales
- Risk of secondary effects is greater at higher levels of premium rate increase

Retail health insurance has many characteristics of long-term business

- Customer risk profile develops over many years from date of first policy issue in ways that are not reflected explicitly in the corresponding pricing profile.
- Multi-year portfolio forecasting can provide valuable insights for current pricing actions and portfolio steering
- Full assessment of product profitability demands a lifetime / multi-year analysis
  - signature of claims risk, management expenses and profit is not uniform
  - customer profitability is sensitive to lapse behaviour

Q: What is the ideal frequency of premium rate revision?

- A: (no less frequently than) **ANNUALLY**

- More frequent revision is OK as individual policyholders are only touched once a year.
- Fixed effective date(s) for rate change each year is preferable to ensure equitable impact for all policyholders.
- Enables insurer to set customers' expectations about the nature of the cover from 1st renewal date.

Q & A

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