

Risk Pricing - Issues For Tomorrow

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Risk Pricing - Why Risk Price?

- So, if we extend the previous example across a portfolio of risks...
- It *could* be summarised that if a company prices in a less accurate way than its competitors, it will experience inferior profitability and ultimately go out of business.
- Of course, many other variables are also involved, including:
 - Underwriting (risk acceptance)
 - Expense management
 - Product offering and customer service
 - Brand positioning
 - And others...
- But, a company with superior pricing clearly has a competitive advantage, all other things equal.











- Affordability issues for some customers, especially when risk can not be reduced.
- But in the past, this was not an issue.
 - The issue has arisen as insurers have become aware of those risk factors
 - Where the risk factor is immutable, the affordability issue is particularly $_{10}\,$ problematic

Location risk immutability

- Location risk
 - largely unchanged over time
 - some long term mitigation activities such as flood levees
 - what changes is recognition or understanding of the risk
 - better sources of data (eg digitisation of flood maps)
 - better modelling of risk (eg cyclone models)
 - better computing power that can allow technical approaches to be used that were previously impossible
 - data volumes no longer an issue with large scalable database systems
 - administration system evolution to enable pricing granularity
 - inversely correlated with wealth in some cases
 - · flood risk in low socio-economic areas
 - whole communities affected in some cases
 - · large part of Cairns for cyclone storm surge
 - urban development in many cases was decades before this risk was understood

Cairns

- In recent years, many QLD coast areas have been surveyed to understand the risk of cyclone-related storm surge.
- Part of a Government project related to emergency planning.
- In terms of number of impacted residents, Cairns (4870) is particularly vulnerable.
- 20% of housing is below AHD +3m.



Flood...

- Compare to Flood risk, which in many cases has been suspected by residents, as evidenced in insurance sales by flood risk level (compared to no-risk areas).
- In some cases, councils knew but suppressed information.
- Many insurers simply did not cover flood risk, even though customers seldom understood this.
- With a move to fully include flood cover and for customers to not be able to delete the cover, for circa 8% of customers, premium will increase materially.
- High flood risk areas correlate with areas in the census with low income.



Estimated Household Income per annum	NSW	QLD
Less than \$10k	20%	30%
\$10-\$20,000	13%	15%
\$20-\$30,000	10%	18%
\$30-\$40,000	8%	16%
\$40-\$60,000	8%	9%
\$60-\$80,000	4%	7%
\$80-\$100,000	7%	4%
Over \$100,000	7%	3%
Average	9%	11%

So, what are the implications of this?

- If customers are faced with increases in premium that they can not ameliorate the following circumstances could arise:
 - Underinsurance
 - Non-insurance customers leave the market
 - Simply 'red zoning' instead of pricing for risk
 - Customers complain to government member.
 - regulation of insurance rating
 - unbundling of insurance cover in the Insurance Contracts Act. Problematic perils covered by government schemes (i.e. removed from the hands of the private sector)
- This of course assumes all insurers have a similar view of the risks
 - Insurers that can not implement or don't have the resources to research appropriate rating are disadvantaged, ultimately leading to failure
 - …or will they?

So, what are the implications of this?

- Social:
 - Some broad geographic areas may find insurance unaffordable or simply unobtainable (red zoning)
 - Low income groups may be priced out of the cover or find it unobtainable
- Systemic:
 - Transfer of risk to government through non-insurance.
 - Budgetary issue for governments
 - Would governments tax the insurance industry further (moving the burden for the uninsured to those who still insure)?
 - Would government support for other insurance industry initiatives be withheld or difficult to obtain?
 - Big players with scale to research and implement systems to appropriately identify and rate risk are at a significant advantage to small industry participants without access to those resources.
 - Long term destabilisation of the industry?
 - Some insurers go broke or get taken over as solvency is threatened by events?
 - Reinsurance becomes more expensive for players with accumulations in these areas, further reducing their ability to compete in the 'better' areas and hastening the problem?
 - ...or is it?

So, what are the implications of this?

- Growth and market pressures:
 - Listed insurers need to maintain growth (among other things) to ensure share price health
 - Carving out sections of the market and increasing premiums gradually reduces the base that an insurer can compete in
 - Balance between risk avoidance/management and growth aspirations.
 - Pressures to NOT pass on risk premiums, even when the risk is known.
 - Mexican stand-off with competitors who are in the same position
- Distribution Channel pressures:
 - Companies will find areas where they are universally more expensive attract a high level of customer complaints.
 - Potential for media backlash.
 - Some intermediaries will be vocal and potentially move whole books of business away.
 - Further pressures to NOT pass on risk premiums...

Are there alternatives?

- On a number of occasions today we have asserted the following:
 - Insurers that do NOT rate high risk areas appropriately will go bust
- But is this really true?
 - When a factor is not rated on, the insurer relies on the implicit cross subsidy between risk levels to maintain profitability.
 - The deterioration in the portfolio will only occur to the extent that the portfolio mix deteriorates toward the high risk (underpriced) group.
 - Insurers have a number of ways of attracting a broad range of customers and differentiating themselves to ensure a 'standard' mix of customers, including;
 - Customer service
 - Product features
 - Brand
 - Claims service
 - Monitoring the mix of business across levels of the risk factor in question is therefore vital to ensure that the underlying risk trend is understood, so mitigants can be employed if it deteriorates.
 - However, the risk factor MUST be identified and understood first.¹⁷

Managed Cross Subsidies Vs. Risk Rating

- If you don't know a cross subsidy exists, you won't monitor it and understand when the subsidy is eroded.
- If the risk factor is understood, it can be monitored.
- Let's now consider a hypothetical example:
 - Eye colour blue and brown.
 - People with brown eyes have 2x claim frequency of people with blue eyes
 - You don't currently collect eye colour from the customer.
 - You can't possibly know (and probably will not even suspect) that eye colour is a risk factor (without a separate data collection exercise).
 - If, for some reason, the mix of business shifts towards brown eyes, the overall claims frequency will increase.
 - What would this increase be put down to?
 - if the factor is not available in the data base, it will probably just be 'systemic effects'
 - in this case, we know this not to be the case.
 - · however, if no market players collect this data, everyone is in the same boat
- A more relevant example might be colour of car...

Managed Cross Subsidies Vs. Risk Rating

- Cross subsidies are most pernicious when you don't know they exist but someone else does and can exploit that fact.
- What about if you knew about the factor, but can't implement risk pricing on that factor - either because of system constraints or some of the issues discussed earlier such as distribution channel issues?
- · How do we manage the subsidy issue?
 - Firstly, know the risk exists in the first place.
 - Monitor the mix of business
 - Respond with across-the-board adjustments to rates?
- But what if there are LOTS of un-rated risk factors?
 - Multiple simple mix charts can still be used and can work, but there may be offsetting impacts across factors and the appropriate response can be difficult to determine
 - Set up a risk premium index which includes the 'true' risk factors and plot this against

Managed Cross Subsidies Vs. Risk Rating

- Set up a true risk premium index which includes the 'true' risk factors and plot this against the risk premium charged.
- Need a starting 'calibration' where the lines are rebased to a common point.
- Later points in the time series divided by the starting value to get relative indexes.



• These charts can be viewed by risk factor - both priced and unpriced

Underwriting, product design

- So you prepare these charts and identify some divergence in the lines, indicating cross subsidies and hence profit margins are being eroded...
- What can you do about it?
- Rate on the factors in question
- But what if you can't rate on it or are limited by regulation to the extent of the premium adjustment?
 - Reduce market presence in affected area (if it is localised)
 - reduce or remove distribution channels
 - lower brand presence (advertising)
 - Red zoning
- But using the Cairns example from earlier, wouldn't most of Cairns be red zoned by all players?
 - Quite possibly, especially if, true to the arms race, they all rush to follow the leader.

Underwriting, product design

- What can you do about it?
- Product design could be modified to exclude the peril driving the risk.
 - 'Unbundling'
 - Non-compliant policy under the Insurance Contracts Act
 - BUT customers must understand what they are removing or not covered for (flood is a good example where customers do not understand this)
 - AND there needs to be an alternative mechanism where cover can be obtained (government scheme?)
- Features of the product could be modified to make the product less attractive to the problematic parts of the portfolio.
 - Tricky territory to be in...
 - overheads in managing multiple PDSs
 - needs a lot of customer research and understanding to determine which benefits to modify to make the product attract different customer groups

Where to from here?

- Insurance is not all about pricing...
- #1 rule is to understand the risk.
- The appropriate strategy to deal with the risk depends on a number of factors, including but not limited to;
 - customer implications
 - company strategy
 - system constraints
 - data constraints
- There are options available to manage situations where pricing is NOT the appropriate solution.
- Cross subsidies are ok!
- ...so long as they are understood and monitored appropriately.

Where to from here?

- But weighting all of these considerations is not the sole responsibility of the pricing analyst.
- It is important to start the discussion internally and to get all the stake-holders engaged so you can move forward.
 - Create reports to monitor the situation and circulate these.
 - Prepare a briefing note to explain
 - the issues for each stake-holder.
 - the options available.
 - the potential outcome(s) under each option
 - Work with the stake-holders to get the best result for the shareholders given the business priorities and constraints faced.
 - Finally, consider the role of the FCR in raising these issues if you get no traction.

Where to from here?

- It is an exciting time to be pricing in General Insurance!
 - new frontiers
 - research opportunities
- There is the potential for 2nd class 'data poor' players to emerge.
 - disadvantage that emerges gradually over time
- Systems be they monitoring or pricing are a key enabler in the new world.
 - It is not just about having the system, but what you do with it.
 - Leverage the assets you have
- Don't forget the insurer's role in the market.
- Consider the industry's role in society.
- Don't forget the customer!
- The arms race is real, but the end is not nigh...