Glitches in the ReMatrix: Misconceptions, Inefficiencies & Mistakes in L&H Reinsurance

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"Unfortunately, no one can be told what the [ReMatrix] is. You have to see it for yourself."

- Morpheus (kinda)
Introduction

- The Life & Health Reinsurance Working Party (“ReWP”) was established in 2014, and is composed of 11 members representing a mix of reinsurance buyers, sellers, advisors and intermediaries
- We last presented at Life Conference 2015: 
  - “Reinsurance should be a Tool, not a Habit”
- Work since then has focused upon identifying Misconceptions, Inefficiencies and Mistakes in Life & Health Reinsurance
- Our forthcoming paper will examine this topic and today we present a summary of the structure and key concepts

Why “Misconceptions, Inefficiencies and Mistakes”? 

- Reinsurance is extensively used by L&H insurance companies, having a significant impact on operations and performance
- Given this, the consequences of poor choices are far-reaching and so we were motivated to identify the many potential things that can go wrong
- Reasons for sub-optimal reinsurance decisions range from simple misunderstandings to explicit errors in the reinsurance process
- What’s worrying is that unless an appropriate framework is used for judging the ‘quality’ of the program, it could be sub-optimal without even being noticed
- By identifying these pitfalls we aim to produce a resource to help all practitioners make better-informed reinsurance decisions
Forthcoming paper structure

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1. You’re unclear where you’re going

“Because you’re not going anywhere else.”

- Trinity

Shareholders’ Objectives
ERM Framework
Risk Appetite
Reinsurance Strategy
Reinsurance Treaty
1. You’re unclear where you’re going

• This is really obvious – so why is it being raised here?
• The reality is that many reinsurance decisions-makers don’t appear to know their shareholder objectives (illustrative of a principal-agent problem)
• And the flow from shareholders to reinsurance is generally broken
• Indeed, ALM programs are generally materially better ‘connected’ than reinsurance programs!
• Even when Risk Appetite Statements exist (as required in some countries) they’re not nearly granular enough to make reinsurance decisions
• Capital-motivated deals are handled better in this regard

2. Making sure you know why you need reinsurance

“Neo, sooner or later you're going to realize that there's a difference between knowing the path and walking the path.”

- Morpheus
2. Making sure you know why you need reinsurance

**Qualitative Benefits**

- Service-related benefits like product development, pricing, medical underwriting (manuals & supports), claims audits, research, innovation, behavioural economics, etc.

**Quantitative Benefits**

- Optimising various financial metrics, subject to targets, tolerances, priorities, etc.

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2a. Making sure you know why you need reinsurance

**Qualitative**

“It just sounds to me like you need to unplug, man.”

- Choi
2a. Making sure you know why you need reinsurance

*Qualitative*

- Here we consider not the financial benefits, but the service-related ones
- Traditional reinsurance has largely been around access to these services
- These services have been sufficiently ‘value add’ that insurers haven’t built frameworks for the quantification of financial benefits from reinsurance
- Indeed, few insurers have even estimated the ‘cost’ of the reinsurance services (and reinsurers may also struggle to put an objective ‘price’ to these)
- Nor has there been much unbundling of the reinsurance offering, but this has started to change
- Potential to change rapidly with the advent of insurtech/fintech, IFRS17, global capital standards, etc.

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2b. Making sure you know why you need reinsurance

*Quantitative*

"Never send a human to do a machine’s job."

- Agent Smith
2b. Making sure you know why you need reinsurance

Quantitative

\[ f(x) = \{\text{optimisation function including profitability, solvency, volatility}\} \]

If you don’t have a quantitative framework for measuring the value of your reinsurance program, how do you know if it’s supporting or worsening your company’s financial metrics?

**Step 1:** Create a solid and sufficiently detailed Risk Appetite Statement

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2b. Making sure you know why you need reinsurance

Quantitative

- Consider a choice of two reinsurance treaty structures:
  - 50% quota share of a critical illness portfolio
  - GBP500k surplus treaty, where 50% of the CI sum-at-risk gets reinsured
- How would you model which one is ‘optimal’ for the insurer?
- It’s easy to do a valuation of each of the positions we’ve mentioned:
  - gross of reinsurance, net of Quota Share, net of Surplus
  - But which one is better?
- To optimise, you need to be able to constrain the model …
2b. Making sure you know why you need reinsurance

Quantitative

- For a start, you need a detailed Risk Appetite Statement (targets & tolerances) to be able create these constraints
- We saw the same happening in the basic two-dimensional Efficient Frontier theory
- For reinsurance, we need more than just risk & return, and we also have different timelines

https://www.youngresearch.com/authors/ejsmith/risk-and-reward-an-efficient-frontier/

- Profitability: average year
- Volatility: 1:10? 1:40?
- Solvency: 1:200
- Regulatory, Economic
- GAAP, IFRS, book
- $ %
- RoRAC, RARoC
- VAR, TailVAR
2b. Making sure you know why you need reinsurance

Quantitative

• Back to our example …
  – The company might have a greater need for volatility control than protecting profit or capital, relative to risk tolerances
  – The reinsurer might hold more capital against Surplus than QS
  – But that might still be the ‘preferred’ structure
• Optimisation of reinsurance takes this further
  – Even if Surplus is the preferred structure, you should still optimise the retention
  – The process of ‘constraining’ your vectors to do this is basically the same

2. Making sure you know why you need reinsurance

• In the world of ‘Misconceptions, Inefficiencies & Mistakes’, there is nothing to say that insurers should choose quantitative over qualitative, for example
• We’re emphasising that insurers should be explicit and deliberate around both
  – they should consider their needs, their targets and their tolerances, they should explicitly consider the cost services and compare this with alternatives
• We are not saying your reinsurance program is wrong, we’re saying that if you can’t ‘prove’ it’s right, it might very well making things worse
  – and we haven’t even said right and wrong for whom
3. Key Parties

“We've survived by hiding from them, by running from them. But they are the gatekeepers. They are guarding all the doors, they are holding all the keys.”

- Morpheus

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CEO, CFO, CRO

Board

Shareholders

Actuarial Management

Reinsurer

Pricing

Policyholders

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3a. Key parties: internal

- e.g. The Chief Actuary may be trying to boost solvency while the CFO is trying to save on reinsurance spend
  - Who are you speaking with? Does the reinsurance proposal meet their various needs?
- e.g. The pricing actuary wants a Fin Re treaty to reduce capital and thus increase the rate of return on business to exceed the hurdle rate, while the valuation actuary already has to deal with the company having excess capital
- e.g. Even if everyone agrees to use an additional reinsurer for CI, the admin team knows the reinsurance admin system can’t accept a second reinsurer
- Decision-maker, Veto rights, Users (actuaries, underwriters, etc.)
- Governance, Approved reinsurers, Internal business case

3b. Key parties: external
3c. You’re not talking to the right reinsurers

• Some misconceptions include:
  – If you’ve spoken to the ones you know, then you’ve covered the market
  – Reinsurers have similar risk appetite & prices between each other, and over time
  – Use of intragroup reinsurance or Insurance Linked Securities is too complex
  – Anything rated below AA is weak (also, if a reinsurer is AA there’s no credit risk)

• Solutions include:
  – Knowing the market, testing the market
  – Developing a more comprehensive risk transfer strategy
  – Active counterparty management

4. Getting the structure & terms right

“The Matrix is everywhere. It is all around us. Even now, in this very room.”

- Morpheus
4. Getting the structure & terms right

- Actuaries might instinctively go for one choice over enough, but often it’s just ‘actuarial judgement’ without reference to a wider framework
- Let’s consider Profit Commission …
  - How different does your ‘vector’ model look, with & without PC?
  - For example, how does the price (profitability vector) compare with value in a bad year (volatility vector), or a really bad year (solvency vector)?
  - Are you more worried about downside, or excited about upside?
  - What’s your risk appetite on this product versus the reinsurer’s?
4. Getting the structure & terms right

• Consider a company with long-term guaranteed cancer business
  – Should you reinsure, if in doing so you reduce your portfolio ROC?
  – What if your capital (unrealistically) assumes no worsening cancer trends, and so
    the reinsurance really destroys your ROC?
  – Would you accept a reinsurance commission in this treaty?
  – Given the increasing risk under this, what is the minimum rating for a reinsurer?
  – Since a correlation matrix exists, is there a ‘better’ reinsurer to choose?

4. Getting the structure & terms right

• How many reinsurers?
  – Just one: “They’re my Best Friends Forever”
  – Or pick the best one each time
  – Some companies run with a Preferred Reinsurer Panel
  – Or you could use a pool of full-service and follower-only reinsurers, pieced together
    in a way that ensures price tension and rewards the real ‘value’ providers
4. Getting the structure & terms right

- There are many other examples:
  - Collateral requirements
  - Reinsurance rate guarantees
  - Clauses which ‘clash’ with regulations or tax
  - Paying for benefits you don’t need
  - Right to increase retention (how much? in-force too? catch-up? at a price?)

5. Contract Wording / Treaty

“Because I don’t like the idea that I’m not in control of my life.”

- Neo
5. Contract Wording / Treaty

- We brought together buyers, sellers, advisors and intermediaries on the Working Party, then invited a lawyer into the mix
- We discovered many Misconceptions, Inefficiencies and Mistakes
- Including the fact that a treaty doesn’t have to be signed to be legally binding!
- Back-dating treaties can get you in a lot of trouble
- We mention some of the issues here, but a fuller discussion will of course be available in our final paper
- Reminder: just because you have a beautifully-worded treaty, doesn’t mean your reinsurance structure is correct

Do you know the difference between the above?
How would you define it?
What should you expect for agreeing a re-pricing? Tax law change?
5. Contract Wording / Treaty

• Even the basics, like definitions, are often inadequate:
  – Different definitions contradict each other, and some terms are never defined
  – Phrases such as ‘reasonable opinion’, ‘material impact’ and ‘reasonably expected to’ are used all over the place, and as long as nothing goes wrong, we just don’t realise how bad that is
  – We talk about ‘covenants’ and ‘warranties’, but these are often not used correctly
  – Many triggers are defined without being clear ‘so what happens then?’

• Treaties can be very one-sided:
  – OK, they don’t have to be perfectly balanced e.g. personal info, credit risk, etc.
  – But think carefully about who can terminate when, with what notice, under what triggers, with what implications?
  – If both parties don’t agree with Party A’s proposal, then Party A can terminate (???)
  – If one party has the right to increase rates when experience deteriorates, then why doesn’t the other party automatically have the reciprocal right to decrease rates when experience improves?

• We’re not saying it must be one way or another, but we hope that anything in a treaty is there on purpose, with forethought rather than by accident
6. Management of in-force and inertia

“We’re willing to wipe the slate clean, give you a fresh start.”

- Agent Smith

Inertia /ɪˈnəːʃə/ (noun)
A tendency to do nothing, or remain unchanged

That’s why companies are left with hundreds and even thousands of treaties, the majority of which are basically in run-off
6. Management of in-force and inertia

• Treaties are generally left to run off naturally, even when it’s a really old treaty, the product itself was never a success, it’s financially irrelevant, etc.
  – There should be a culling exercise every now and then
• We are surprised how seldom companies use a Dashboard for the program
• Even if you get the structure right on new business, your vectors could still be non-optimal because of the significant in-force
• Years later, trends or ‘parameter realisation’ may have rendered the risk transfer out-of-the-money, or may completely invalidate the value of a profit sharing, so a refresh might be useful
• The above point is not surrendering, and becoming a charity!

6. Management of in-force and inertia

• Treaty recapture mechanisms are often poorly defined, even when a ‘commutation value’ is defined
• This is often defined using some form of EV, but …
  – In the reasonable opinion of just one party?
  – Shouldn’t be designed to lock in a specific level of profitability as expected at T₀
  – What parameters should be used, if the world has changed
7. The insurer/reinsurer relationship

“You take the red pill - you stay in Wonderland and I show you how deep the rabbit-hole goes.”

- Morpheus

Do you consider your reinsurance relationship collaborative?
Are you able to, and do you, challenge the status quo?
Does win-win really necessitate perfectly matched?
7. The insurer/reinsurer relationship

- Reinsurance is ultimately an agreement between two consenting parties
- There needs to be a balance: the insurer isn’t always right, nor should the reinsurer always dominate
- Dashboards, again, will help both parties show what’s been going in and out
- Consider the Pros and Cons of:
  - Relationships / partnerships
  - Commoditisation of reinsurance / purely transactional

Conclusion

- We come back to our original conclusion:
  - Reinsurance should be a tool not a habit
- Today’s session was more of a teaser – the paper has a lot more detail
- Key takeaways are:
  - Be clear on the objectives
  - Measure the impact
  - Optimise
- We welcome your input – comments and suggestions can change the paper
"I'm trying to free your mind, Neo. But I can only show you the door. You're the one that has to walk through it."

- Morpheus