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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)

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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

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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

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01 You need to know where you're going!

Do you link the risk management framework to your commercial objectives?

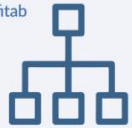
02 Current arrangements

How well do the current Reinsurance arrangements meet your above objectives? Do you know?

03 Qualitative & Quantitative goals

$f(x) =$ {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?



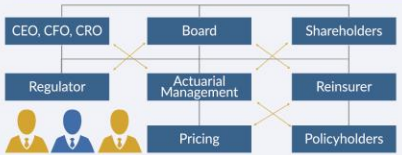
08 Partnerships, and the value of Transactions

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

Life & Health Reinsurance Working Party

We seek to move beyond the theory of reinsurance, to focus on the practical implementation & maintenance of such programs. We are currently considering the more common mistakes, inefficiencies & misconceptions that we've observed within the industry. We will provide some practical solutions to the questions raised around these issues.

04 Consideration of stakeholders



Does your reinsurance program consider all stakeholders?
Does it fulfil their needs?

07 Review Inertia

/ɪˈnəːʃə/ **noun**

A tendency to do nothing, or remain unchanged

What does it take to review your reinsurance arrangements?
Who (or what) can trigger a review?
When last did you actually review one?

06 Structure and terms of reinsurance treaties

Do you understand your treaty wording? Can it be misinterpreted?
Do they do what you think they do?

05 Structuring and terms of reinsurance treaties

Are your treaties structured to meet your needs?
Are they cost effective, and reasonable compared with the market?
Do the features, constraints, rights and obligations make sense?

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Forthcoming paper structure

Chapter	Title
1	You're unclear when you're going
2a	Making sure you know why you need reinsurance – qualitative
2b	Making sure you know why you need reinsurance – quantitative
3a	Key parties: internal
3b	Key parties: external
3c	You're not talking to the right reinsurers
4	Getting the structure and terms of your reinsurance right
5	Contract wording / Treaty
6	Management of in-force and inertia
7	The insurer/reinsurer relationship

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1. You're unclear where you're going

"Because you're not going anywhere else."

- *Trinity*

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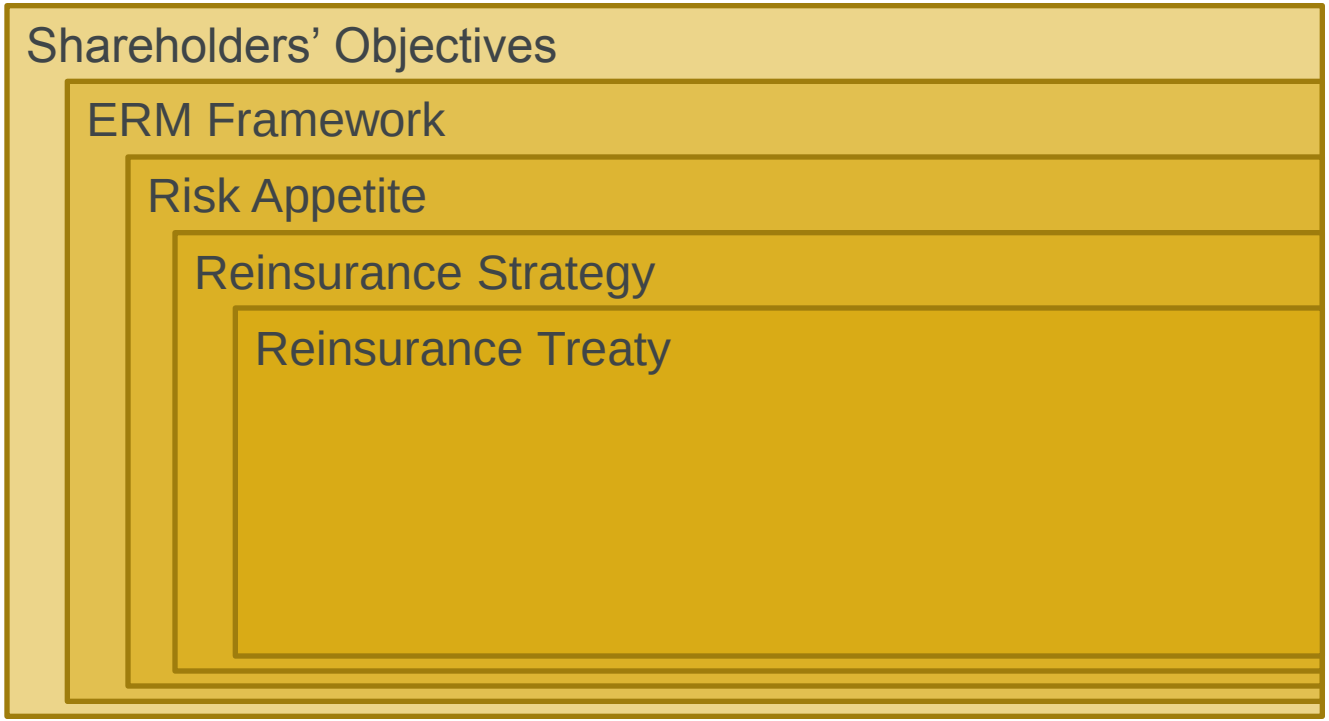
1. You're unclear where you're going



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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

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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*

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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

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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

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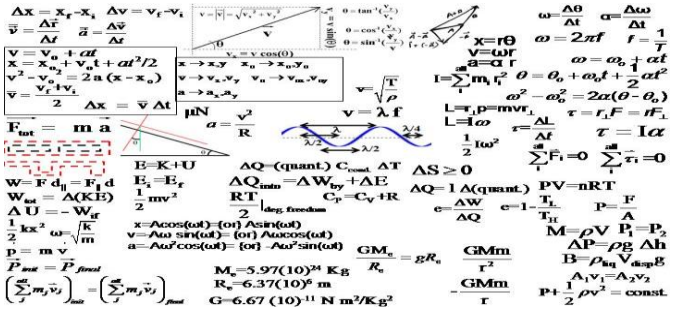
2b. Making sure you know why you need reinsurance
Quantitative

***f(x)* = {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 …

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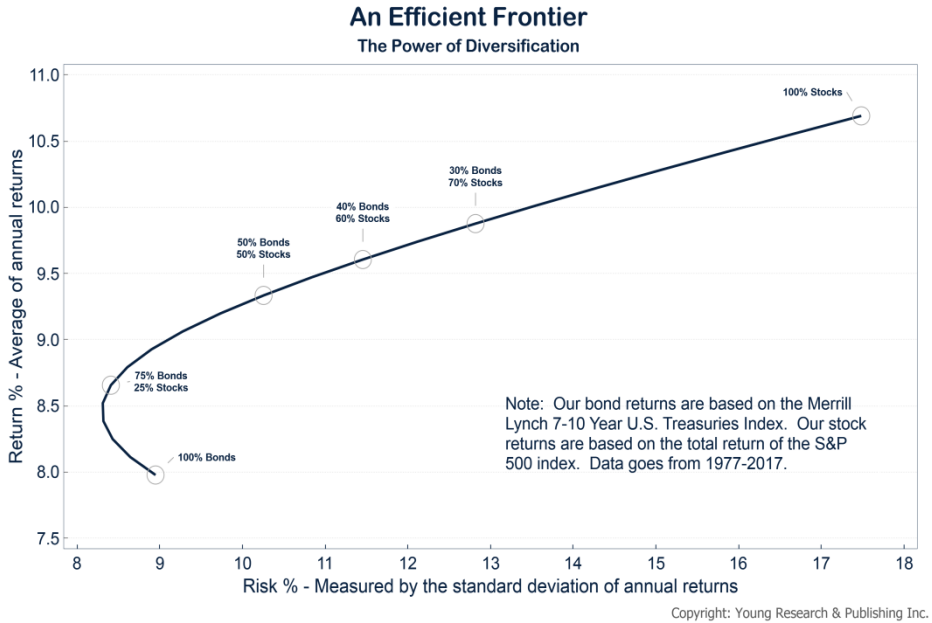
2b. Making sure you know why you need reinsurance *Quantitative*

- 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/

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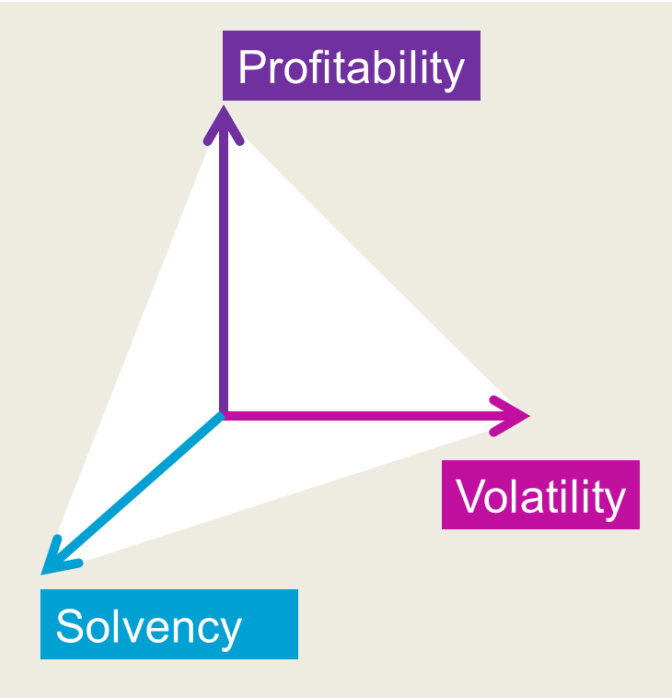
2b. Making sure you know why you need reinsurance
Quantitative



- Profitability: average year
- Volatility: 1:10? 1:40?
- Solvency: 1:200

- Regulatory, Economic
- GAAP, IFRS, book

- $ %
- RoRAC, RARoC
- VAR, TailVAR

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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

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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

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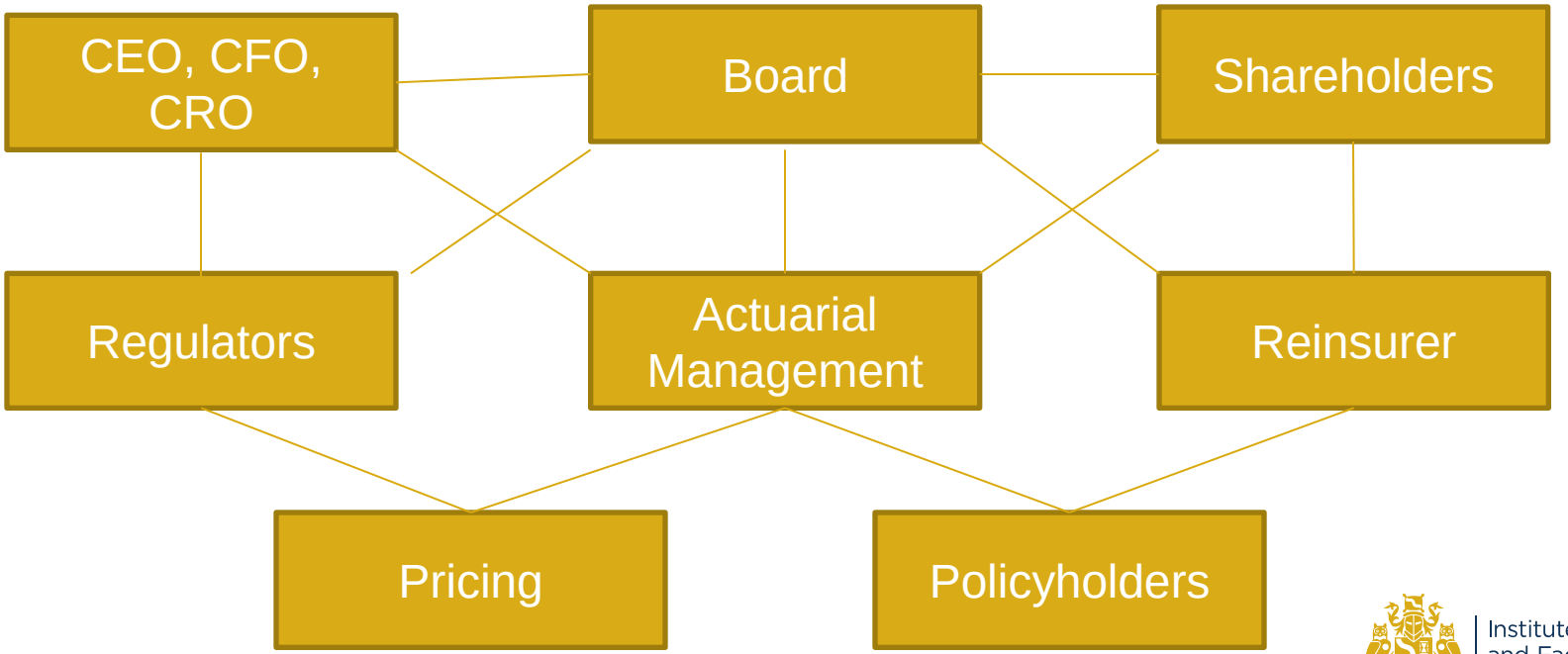
3. Key Parties

"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

3. Key Parties



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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

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3b. Key parties: external

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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

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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

Proportional	Non proportional
Cost	Benefit
Traditional	Structured
Profit Commission	Pure risk
Upfront commission	Ongoing commission

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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?

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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?

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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

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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?)

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5. Contract Wording / Treaty

"Because I don't like the idea that I'm not in control of my life."

- *Neo*

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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

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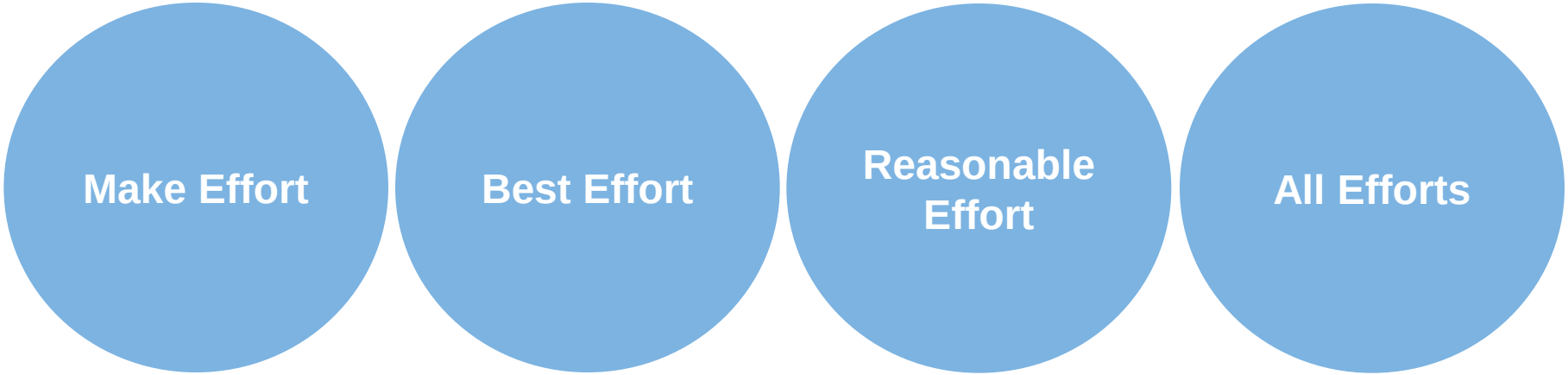
5. Contract Wording / Treaty



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?

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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?’

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5. Contract Wording / Treaty

- 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

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6. Management of in-force and inertia

"We're willing to wipe the slate clean, give you a fresh start."

- Agent Smith

6. Management of in-force and inertia

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

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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!

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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 T_0
  - What parameters should be used, if the world has changed

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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

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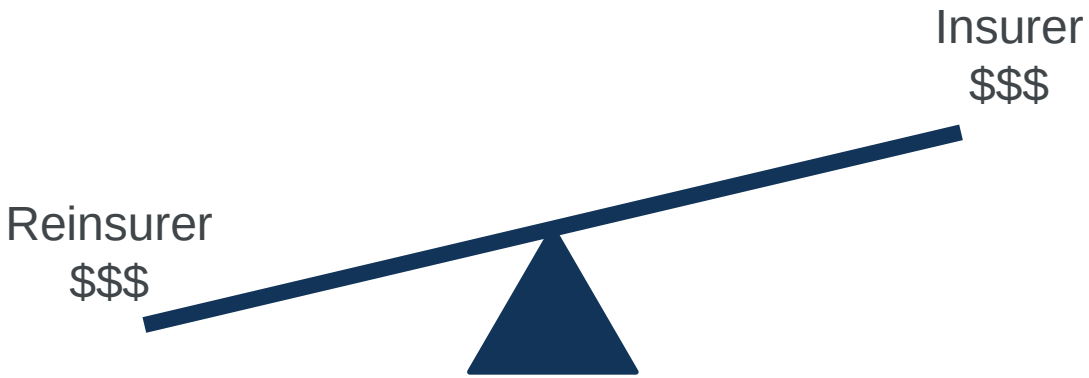
7. The insurer/reinsurer relationship



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?

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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

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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

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"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

Questions

Comments

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