



DESIGNING A REINSURANCE PROGRAMME

Sponsored



Prepared for Africa Re by the



Designing a Reinsurance Program
©London School of Insurance 2016
v3.1 - 24042017

INDEX

<i>Section 1</i>	INTRODUCTION.....	5
	1.1 Review of courses 1 & 2 and how the knowledge will assist in the designing of a reinsurance programme.....	5
	1.2 Learning Objectives.....	5
<i>Section 2</i>	BASIC BUILDING BLOCKS.....	7
	2.1 What is a risk/event. The risk “iceberg”.....	7
	2.2 What is a loss - losses occurring, policies issued, claims discovered, claims made.....	8
<i>Section 3</i>	REALISTIC DISASTER ANALYSIS – WHAT COULD HAPPEN AND HOW MUCH COULD IT COST.....	10
	3.1 Property.....	10
	3.2 Liability.....	10
	3.3 Marine hull and cargo.....	11
	3.4 Life and sickness.....	11
	3.5 Aviation.....	11
<i>Section 4</i>	REVIEWING INTERNAL RESOURCES.....	12
	4.1 Administration to distribute risks and losses under different types of cover.....	12
	4.2 Accounting requirements of different types of cover.....	12
	4.3 Information requirements.....	13
<i>Section 5</i>	REVISITING THE BASIC FORMS AND TYPES OF REINSURANCE.....	14
	5.1 Facultative reinsurance.....	15
	5.1.1 Key features.....	15
	5.1.2 Advantages and disadvantages.....	15
	5.1.3 Proportional Arrangement.....	15
	5.2 Treaty reinsurance.....	19
	5.2.1 Key features.....	19
	5.2.2 Proportional treaty reinsurance.....	20
	5.2.2.1 Quota Share – advantages/disadvantages.....	20
	5.2.2.2 Surplus – advantages/disadvantages.....	22
	5.2.2.3 Facultative Obligatory – advantages/dis.	26
	5.2.2.4 Case Study.....	27

	5.2.3 Non-proportional Treaty.....	28
	5.2.3.1 Risk excess of loss treaty.....	29
	5.2.3.2 Catastrophe excess of loss treaty.....	30
	5.2.3.3 Stop Loss Treaty.....	30
<i>Section 6</i>	REINSURANCE STRUCTURE.....	32
	6.1 The objectives of a reinsurance programme.....	32
	6.2 Factors which influence programme design.....	32
	6.3 Setting retentions.....	33
	6.4 Combining proportional and non-proportional covers.....	34
	6.5 Scenario analysis, examples of running losses through various structures.....	34
	6.6 Consideration of alternative risk transfer methods.....	35
	6.7 Pricing logic / affordability.....	36
<i>Section 7</i>	IMPORTANT CLAUSES.....	44
	7.1 Reinstatement.....	44
	7.2 Index clause.....	45
	7.3 Currency fluctuation.....	46
	7.4 Hours clause.....	47
	7.5 Claims co-operation and ex gratia claims.....	47
<i>Section 8</i>	CHOICE OF REINSURER.....	49
	8.1 Financial strength – Solid balance sheet / Acceptable rating.....	49
	8.2 Good claims payment record (not only able, but also willing to pay).....	49
	8.3 Underwriting expertise.....	49
	8.4 Market knowledge – domestic and international.....	50
	8.5 Corporate objectives / Underwriting strategy.....	50
<i>Section 9</i>	CHOICE OF REINSURANCE INTERMEDIARY.....	51
	9.1 Be familiar with and have access to the world-wide markets.....	51
	9.2 Be able to offer technical know-how, documentation, and support with difficult claim issues.....	51
	9.3 Be able to facilitate training programmes.....	51
	9.4 Appreciate the income your business will generate, and thus care about your business.....	52

	9.5	Be familiar with your local market, and any special needs and requirements it may have.....	52
	9.6	Be an able and friendly counsellor.....	52
<i>Section 10</i>	CONCLUSION		53
<i>Section 11</i>	TEST		54
<i>Appendix A</i>	TEST ANSWERS		58

1. INTRODUCTION

1.1 Review of courses 1 & 2 and how the knowledge will assist in the designing of a reinsurance programme

There can be few religions or societies that do not support the notion that we should help one another, and this fundamental principle has been reflected from the earliest family groups right up to the modern promotion of the welfare state. Without protection from nature's basic risks it is difficult for societies to evolve. Farmers are reluctant to take on heavy debt where they are totally reliant on the weather, and investors are reluctant to send ships around the world, to build large organisations or encourage economic development where too many risks are involved.

The notion of helping one another has ranged from wholly non-profit organisations and charities, to co-operatives, mutual societies, to for-profit insurance companies and more recently takaful.

Whichever form of organisation takes on large and complex risks, it needs to manage those risks responsibly if it is to fulfil its objectives in a business-like manner and properly protect its customers.

There is no substitute for technical appreciation and knowledge when it comes to managing risks, and one of the strategic goals of Africa Re is to promote and support education and training in the insurance and reinsurance space.

This course "designing a reinsurance programme" is the third in a series of courses designed to this end.

It follows the first course "Introduction to Reinsurance" which was designed:

- To provide you with an introduction to the world of reinsurance.
- To enable you to feel comfortable with, and understand, the core concepts and the principles.

It follows the second course which was designed to provide you with the key elements of the practice of reinsurance:

- An understanding of reinsurance documentation
- A knowledge of additional types of reinsurance cover not covered in course 1
- An understanding of reinsurance accounting
- An understanding of statistics, incurred but not reported claims and risk profiles
- An understanding of pricing methods
- An understanding of the reinsurance cycle.

1.2 Learning Objectives

The objective of this course is to build on the knowledge gained in the previous two courses to enable you to design a reinsurance programme.

The main sections of this manual are as follows:

- Basic building blocks - risks and losses

Learning objective: To have a clear understanding of what is a risk, and what is a loss under different scenarios.

- Realistic loss scenarios

Learning objective: To be able to create realistic loss scenarios for the different classes of business and the possible interaction between these classes.

- Administration

Learning objective: To appreciate the resources necessary to administer different forms and types of reinsurance cover.

- Revision

Learning objective: A revisiting of the basic forms and types of reinsurance, and their advantages and disadvantages to appreciate the “mixing and matching” process that will be necessary to create a reinsurance programme that best meets requirements.

- Building a reinsurance programme

Learning objective: To understand the process of putting a reinsurance programme together, objectives and influencing factors. How to best review retentions and to understand how losses flow through different reinsurance structures. To be able to test the robustness of a proposed structure against different loss scenarios. Affordability.

- Important clauses

Learning objective: To be familiar with important reinsurance clauses that can limit or expand cover.

- Choosing a reinsurer

Learning objective: To identify the right reinsurers

- Choosing a reinsurance intermediary

Learning objective: To choose the right reinsurance intermediary

We hope this manual will provide you with the additional knowledge you will need to reach this goal, and will also encourage your further research of this important aspect of reinsurance.

Other manuals will soon be available to assist you with these further researches.



2. BASIC BUILDING BLOCKS

Learning objective: To have a clear understanding of what is a risk, and what is a loss under different scenarios.

2.1 What is a risk?

Risk has been defined as “the chance that an investment’s actual return will be different from that expected. Risk includes the possibility of losing some or all of the original investment.” This definition is a long way from a motor insurance policy or a householders insurance and it demonstrates the broad area that the word “risk” can cover, from possessions such as cars to complex commercial investments in equity portfolios and other financial market risks.

Thus it makes sense to ask the question when considering a portfolio to be covered by reinsurance, what is a risk? If one considers a property portfolio, for example, is the insured’s factory in Lagos one risk, or are the 20 factories owned in Nigeria and covered by a single policy one risk? What if the client owns factories in neighbouring countries – is this all one risk as one client is involved? Could the factories owned in other countries be considered “incidental” risks in a treaty where the territorial scope is Nigeria and incidental risks abroad. When is a risk “**incidental**” and when not? Generally “incidental” is not defined in percentages or values, but rather in a vague way - Incidental exposures are those which arise during the course of normal business in addition to the main exposures to be covered.

It is, for this reason important that the treaty agreement clearly states that the reinsured will be the sole judge of what constitutes one risk, but even with this condition, it is nevertheless relevant that the reinsured itself has thought about this important issue.

The same challenges can apply to the word “event”. If an earthquake hits an area and does damage, and three hours later there is a serious aftershock which does damage, and two hours later there is another serious aftershock which does damage, and eight hours later there is another serious aftershock that does damage, and two days later the same thing. Is this one event or is this five events? As it was impossible to have loss adjusters on the scene so quickly, is it possible to determine what damage was done by what event? A similar issue can apply with a storm or repetitive floods.

Equally an insured may, for example, have storage tanks containing dangerous liquids. If these liquids escape due to an earthquake or a storm or a flood the liability losses can be much greater than the property losses, are all these losses covered in an event cover?

Time and scope must be considered when considering the meaning of event.

Finally one should consider the “risk iceberg”.



Uninsured risk

Loss of reputation, loss of shareholder value, loss of market share or simply the management time to adjust and dispute a complex claim.

The risk iceberg has various theories which result in the figures above, but one can read multiples that go to excess of 50 or even 100. That is to say that if we evaluate the risks we can see, then there are (in the above graph) 8 to 36 times more risks we can’t see – as with an iceberg, they are below the water-line, and thus invisible. They include

elements such as loss of reputation, loss of market share and the time management and employees need to adjust, dispute and recover from traumatic loss.

It is often the risks which were unseen and went unnoticed that can cause catastrophic loss. Who would have imagined, for example, the multiple impacts of climate change, or the many aspects of cyber risk, or the future impact of nanotechnology.

New risks are emerging constantly and those responsible for risk management in insurance companies need to remain alert to the visible and invisible risks.

2.2 What is a loss - losses occurring, policies issued, claims discovered, claims made.

Just as a risk can have a number of interpretations, so a “loss” can have different meanings, and what needs to be covered has to be considered carefully.

Under coverage on a **losses occurring basis** a reinsurance will respond to losses that occur during the contract period. Thus if a loss actually happens during the period of the reinsurance, it is covered.

Under coverage on a **policies issued basis**, a reinsurance will respond to losses which occur during the period of the policy. Generally policies are issued on an annual 12 month basis, although they can be issued for a longer period. The policy term may be different from the reinsurance contract term, but reinsurance cover will be available until all policies issued during the reinsurance contract term have expired or have been renewed.

Under coverage on a **claims discovered basis**, losses discovered during the term of the reinsurance contract will be covered by the reinsurance, irrespective of when the claim occurred or when the policy was issued. However such reinsurance contracts may limit when the claim occurred or the policy was issued to a defined period in the past e.g. this coverage shall only apply to policies issued or claims which occurred since 1995.

Under coverage on a **claims made basis**, reinsurers will cover claims made to the reinsured during the period of the reinsurance regardless of when the policy was issued, the loss actually occurred or when the claim was discovered. However such reinsurance contracts may limit when the claim occurred or the policy was issued or the claim was discovered to a defined period in the past e.g. this coverage shall only apply to policies issued or claims which occurred, or claims which were discovered since 2001.

These variations are discussed in further detail below.

If one takes, for example, the history of asbestos. Mr. Smith worked in the ABC Manufacturing Company where asbestos was used in the manufacturing processes from 1.1.1965 to 31.12.1969. He became ill, and his doctor diagnosed malignant mesothelioma on 1.7.1980. Mr. Smith brought an action against ABC on 3.2.1981. ABC advised their insurer on 20.2.1981. His wife, who had washed his work overalls also became sick and was diagnosed with lung cancer on 3.5.1989. She brought an action against ABC on 5.7.1991. ABC advised their insurer on 25.7.1991.

When did the loss occur, and assuming ABC had insurance from 1964 to 1991, which policy is exposed?

Problems arise because Mr. Smith worked from 1.1.1965 to 31.12.1969, and there will be little evidence to pick on period or another when infection was decisive, indeed it may have been a build-up of exposure over the whole period. But Mr. Smith only had cause to bring action once the illness was discovered on 1.7.1980, and he only made a claim against ABC on 3.2.1981.

Originally most reinsurances were on a losses occurring or policies issued basis. Thus in this case ABC would likely make a claim on all the years 1965 to 1969, and on a losses occurring basis, the reinsurers on the years 1965 to 1969 would be advised of a potential loss. Generally it is left to the courts to decide the apportionment of the claim to the various years.

If the reinsurance was on a policies issued basis, and say the policy was issued on 1.6.1964 and renewed at each anniversary, then reinsurers on the years 1964 to 1969 would be exposed as the policy issued in 1964 would still be current at 1.1.1965, and the policy issued on 1.6.1969 would be current at 31.12.1969. Again it would likely be left to

the courts to decide the apportionment of the claim to the various years.

Another variant is claims discovered. Mr. Smith's illness was discovered on 1.7.1980, and if the reinsurance cover was on a claims discovered basis, then the reinsurers liable at that time would be on risk. This is a much clearer situation than trying to apportion the claim over several underwriting years as under losses occurring or policies issued.

Another variant is claims made, and if ABC advised their insurer on 20.2.1981, then reinsurers liable at that time would be on risk. Again there is no need to apportion the loss over several underwriting years.

So a cedant needs to carefully consider the basis of its cover - should it be on a policies issued basis, a losses occurring basis, a claims discovered basis, or a claims made basis.

Generally short tail policies are on a losses occurring basis, and long tail policies on a claims made basis, but this is only a general rule and exceptions can apply.

However a very important point to note is that if historically a cedant has had its reinsurance long tail covers on a losses occurring basis, and then changes to, for example, a claims made basis, there could be a gap in cover. This issue needs careful consideration as cover provided by reinsurers on a claims made basis will specify from what date their exposure to loss apply, for example, only on policies issued after 1.1.2015. Thus if a claim is made on policies issued before that date, then reinsurers will not be liable for any loss. It is thus important that this date is carefully considered by the cedant, and negotiated as far back as possible, so that a maximum of policies issued is covered, and the "gap" is reduced as much as possible.

Equally, when the reinsurance cover ends, for example, 31.12.2015, there will still be policies issued by the cedant and running over the end of the year, and what happens when a claim is made under those policies? Thus the cedant needs to negotiate a date after which it can no longer make a claim on reinsurers on the final "claims made" year. This date should be as late as possible, so the cedant can make a claim on its reinsurers as far into the future as possible.

These issues are regulated in what is often called "sunrise" and "sunset" clauses. The "sunrise" clause covering the date from which policies issued by the cedant prior to inception of the claims made cover will be included in the cover, and the "sunset" clause naming the date from which the cedant will no longer be able to make a claim on the expired claims made cover.



3. REALISTIC DISASTER ANALYSIS – WHAT COULD HAPPEN AND HOW MUCH COULD IT COST?

Learning objective: To be able to create realistic loss scenarios for the different classes of business and the possible interaction between these classes.

Realistic disaster analysis or realistic disaster scenarios is practised by a number of companies to understand their exposure to certain possible events.

Lloyd's requires syndicates to perform certain scenarios, several of which are focussed on exposure to disasters in the USA, but more generic examples such as flood – affecting lives – death and injury; property and business interruption; road, rail, underground and air transportation; and pollution. Terrorism – which can impact on similar risks, and include CBRN risks - Chemical, Biological, Radiological or Nuclear hazard exposures. Pandemic risk. Marine risk, where one of the scenarios is a large cruise ship colliding with a large oil tanker – loss of life, fire, pollution. An air disaster with a sport team on board, or a collision of two large passenger aircraft directly above a major city. These are good scenarios for a cedant to adapt to their local portfolio, and their writings overseas, as may be applicable.

3.1 Property

Property scenarios should include large shopping centres, or an area of 1 square kilometer based from the centre of the country's largest city. Flood prone areas should also be identified and mapped with values. Equally a terrorist act should be analysed with the use of chemical, biological, radiological or nuclear substances. Consideration should also be given to wind storm and earthquake as may be relevant.

It should also be remembered that after a disaster everyone who has suffered loss is demanding the same re-building materials, electronic goods, and other consumables, and prices can go up dramatically. If demand includes imported goods, the local currency rate of exchange can be affected. At the same time the financial markets can be in crisis, thus both the asset and liability side of the balance sheet is involved.

How much could it all cost?

3.2 Liability

Depending on the sub-classes of liability written, again various scenarios can be developed. Automobiles can be the cause of significant loss. There are examples of basic cheap cars getting stuck on railway crossings and derailling trains carrying works of art for a special showing causing millions of dollars of damage, or reversing a trailer which then falls down a railway bank and deraills a high speed train full of passengers.

Where professional liability of large firms of lawyers or accountants is involved, equally multi-million dollar suits can occur.

What is the worst case scenario, how much could it cost, how much reinsurance cover can be purchased, what is the maximum spend for this reinsurance cover?

Note also needs to be taken of the current legal environment, and the possible need to provide annuities or indexed compensation where ultimate losses are even more difficult to assess.

3.3 Marine hull and cargo

Where hull is concerned, do ships go near to oil rigs, with the risk of collision and pollution. As with the Lloyd's suggested scenarios, does your portfolio cover cruise vessels and oil tankers, and then what could be the result if they collide?

Where cargo is concerned, what high value cargo does the company cover – diamonds, gold, nuclear waste? What cargo could be stolen or damaged, what cargo is exposed to spill – like nuclear waste? Are there obvious accumulation points – ships regularly used by the same clients, known bottlenecks at major ports where the cargo is likely to be, areas where there are numbers of large warehouses which could all be exposed to the same conflagration?

3.4 Life and sickness

Life, sickness, including funeral covers and pensions can be very long term, and there are not only the risks under the policies, but financial risks, especially interest rates, that can have a major impact on the size of potential losses.

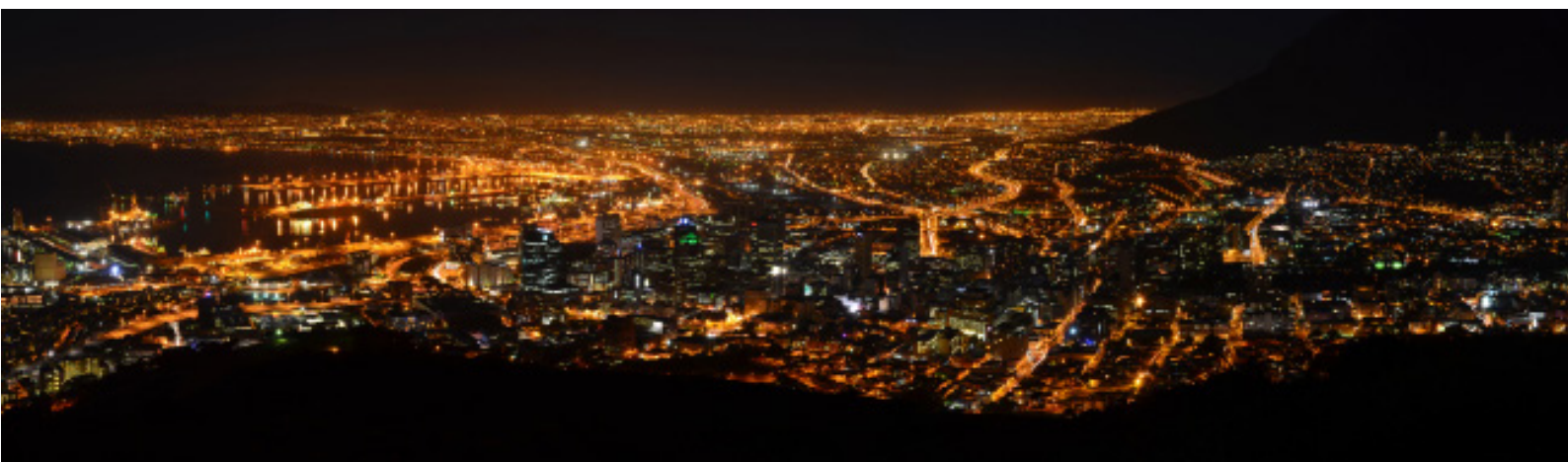
Many companies have suffered major loss where the promise of generous interest to policyholders over the period of the cover has been completely undermined by the large fall of interest rates available to the insurance company over the same period.

Life can also be affected by wars, major terrorist acts, accumulations on aeroplanes, ships and trains. The exposure to pandemics is also much greater today as large numbers of humans cross paths in major airports flying east to west and west to east every single day. The possibilities for disease to spread ever faster and ever more widely increases constantly.

Given the portfolio in your company, how much could a major event cost?

3.5 Aviation

The scenario of two large passenger aircraft colliding over a major city may be a good scenario to consider, but as with the world trade centre, scenarios such as aircraft colliding with major buildings either through chance or as terrorist acts or aircraft carrying hazardous goods releasing their load over areas of large housing estates all give rise to potentially large losses. How much could it cost for your company?



4. REVIEWING INTERNAL RESOURCES

Learning objective: To appreciate the resources necessary to administer different forms and types of reinsurance cover.

Reinsurers require reliable, good quality, transparent information to underwrite and price business. Where the quality of the information falls below that standard, pricing will increase with uncertainty to the point where the risks will be refused for lack of proper information. Equally if cedants make mistakes with cessions, or the advice and distribution of losses, or they fail to provide good reserve information or supply unreliable statistics, so capacity in the reinsurance marketplace may become more scarce, and pricing much higher.

Cedants should evaluate the resources required under different types of cover, and to produce the necessary outputs for good offer and renewal information. While a large loss can happen at the very end of the year, and everyone understands this possibility, discovery of a large loss long after it should have been advised to reinsurers is not acceptable.

Many reinsurers also provide training programmes to their clients and prospective clients, and this may help to increase the resources necessary to properly administer the reinsurance in place.

Reinsurers today also audit more regularly, and the easier it is to find files, and the easier the files are to read, and the more accurate the information, the more likely the client is to be able to get a commission increase or a better price than the client who fails to show a well run back office.

4.1 Administration to distribute risks and losses under different types of cover.

Proportional business requires more processes and processing than non-proportional business, on the other hand reinstatements, hours clauses, index clauses, interlocking clauses can make the administration of non-proportional business more challenging. While the need for proportional cover may be strategically and financially necessary, or non-proportional business may be preferred for much more important reasons than administration issues, cost may be materially influenced by good or bad administration, so the implications of each type of cover should not be ignored.

4.2 Accounting requirements of different types of cover

Much of the same comment as a) above applies to the accounting issues, except that under proportional business there is a choice between accounting year and clean cut. Serious consideration should be given to clean cut proportional treaties, but again a reinsurer is only likely to agree to a clean cut system where it has faith in the ceding company's figures and can trust that, for example, future claims payable will be properly matched by the outstanding loss portfolio it receives.

4.3 Information requirements

You can't run a business without good information, you can't risk manage a business without good information, and you can't negotiate good reinsurance pricing without good information, so are the right processes in place to achieve this? If not, what is the crucial information necessary, and what can be added at a later stage? Equally there is no point in developing new areas and classes of business, if the information processes are inadequate for the current business, or agents and staff are insufficiently trained for their existing jobs.



5. REVISITING THE BASIC FORMS AND TYPES OF REINSURANCE.

Learning objective: A revisiting of the basic forms and types of reinsurance, and their advantages and disadvantages to appreciate the “mixing and matching” process that will be necessary to create a reinsurance programme that best meets requirements.

Reinsurance can be placed in one of two forms – Facultative or Treaty.

FACULTATIVE REINSURANCE

- Facultative reinsurance is insurance for INDIVIDUAL RISKS on a case by case basis
- Practically, the direct insurer is free to choose which individual risks it want to reinsure, and the reinsurer is free either to accept or refuse any risk offered to it: hence the term FACULTATIVE

OBLIGATORY REINSURANCE

- Obligatory reinsurance is reinsurance for the ENTIRE PORTFOLIO on an automatic basis
- Practically, the direct insurer is obliged to cede a contractually agreed share of the risks and the reinsurer is obliged to accept that share: hence the term OBLIGATORY

Both the Facultative and Treaty forms can be placed as either Contributory or Proportional Reinsurance, or Non-Contributory or Non-Proportional Reinsurance. Facultative reinsurance is dealt with in detail in 6.1 below and Treaty placements are dealt with in detail in 6.2.

There are two main types of reinsurance - Contributory or Proportional Reinsurance, and Non-Contributory or Non-Proportional Reinsurance.

PROPORTIONAL REINSURANCE

- This type of reinsurance is based on RISKS
- The reinsurer will receive the premium and will have to pay the losses in proportion to its participation in the sum insured of the original risk: hence the term PROPORTIONAL

NON-PROPORTIONAL REINSURANCE

- This type of reinsurance is based on LOSSES
- The reinsurer will have to pay only if an actual loss for a risk or number of risks exceeds the deductible, and then only up to the cover limit as contractually agreed. As the price for the cover, the reinsurer gets a negotiated portion of the original premium.

Under Contributory or Proportional Reinsurance the insurance company or cedant passes or cedes a proportion of its liability on an individual risk or number of risks to a reinsurer and pays the reinsurer the same proportion of the original premium for the risk or risks. In the event of a claim, the reinsurer in return will reimburse the insurer with the same proportion of the claim or claims.

Thus if you review a reinsurance cover and find that the reinsurance cession is calculated as a function of the sum insured, then you are looking at a contributory or proportional reinsurance. Proportional reinsurance is explained in much more detail in 6.2.2 below.

Non-Contributory or Non Proportional Reinsurances apply not to specific risks but to losses. They limit the amount of loss an insurance company or cedant can suffer under any one claim or event.

Unlike contributory or proportional reinsurance, the cedant does not cede risks to the reinsurer but the reinsurer agrees to pay the amount of a loss over and above, or in excess of, a fixed amount referred to as the cedant's "retention", or "deductible", or "priority". The portion payable by the reinsurer is referred to as the "cover". Thus, the cover relates to losses rather than individual risks forming the ceding company's portfolio. Non-proportional reinsurance is explained in much more detail in 6.2.3 below.

5.1 Facultative Reinsurance

5.1.1. Definition and Key Features

Facultative reinsurance is the oldest form of reinsurance. It can be arranged either on a proportional or non-proportional basis. The word facultative means optional i.e., it gives the reinsurer the right to accept or decline the business being offered to it. Another feature of facultative reinsurance is that it is only used for individual risks.

Generally it is used under the following circumstances:

1. When automatic treaty arrangements - see 6.2 below - have been used up, i.e., a particular risk exceeds the automatic treaty limits.
2. The risk is excluded from the automatic treaty arrangements - see 6.2 below - e.g., it is located outside the geographical limits or it is an excluded class of business.
3. The insurance company does not want to expose its automatic treaty arrangements - see 6.2 below - with particularly heavy and hazardous risks.
4. There is no automatic cover available in a particular class of business e.g. cyber risk where the ceding company rarely issues policies.
5. Where the insurance company wishes to increase its own premium volume by offering facultative reinsurance in exchange for similar business from other insurance companies (known as "inwards facultative reinsurance").

5.1.2. Advantages and Disadvantages

Advantages :

1. It enables the ceding company to increase its capacity in individual instances where it is commercially necessary or profitable or both to do so.
2. It enables the ceding company to make use of a reinsurer's expertise in a particular class of business where the ceding company may have very little experience itself.
3. It enables the ceding company to offer flexibility to important clients or may enable it to compete for important market accounts where a part of the business is unusual or outside its normal underwriting policy.
4. As noted above, it can enable the ceding company to protect its automatic capacity where it needs or wants to write a particularly hazardous risk which could unbalance its automatic treaties.
5. Offering facultative business can also be a good way for a ceding company to gain knowledge of a new reinsurer with whom it would like to work, to understand better its competitiveness, its ability to reply promptly, and

other services it may be able to provide.

Disadvantages :

1. The time necessary to offer a risk to the reinsurance markets can delay the issue of a policy which can create problems for intermediaries, agents and clients.
2. Seeking facultative reinsurance increases administrative costs.
3. The ceding company may lose some of its freedom in fixing the price and terms of the insurance and even in certain cases the reinsurer may require the ceding company to refer to the reinsurer when settling losses.
4. It may not be possible to amend the policy unless the reinsurer agrees.
5. If the business is placed facultatively with a competitor, it may provide the competitor with the information it needs to steal the client at the next renewal.
6. Lack of fully “back-to-back” cover or differences in interpretation of the wording of the reinsurance cover may create problems to collect claims.

5.1.3. Proportional Arrangement

For example: The Royal Insurance Company is offered a new risk from one of its most important clients – The International Group. The International Group want to extend their business into furniture manufacturing and intend to buy a factory currently on offer for a good price. Prior to purchase they approach the Royal through their intermediary to obtain cover.

The Royal has a problem as furniture manufacturers, being a hazardous risk, are excluded from their treaties, but they must show flexibility to this important client. So they seek the advice of a reinsurer willing to take 80% of the risk, and together they set terms and produce a policy wording. The proportional reinsurer will then receive 80% of the premium (net of brokerage) and less a reinsurance commission, and pay 80% of the losses.

CASE STUDY

Taking the example above, the Royal agrees terms with the client’s intermediary and produces the following proportional “slip” to offer the risk facultatively to reinsurers.

SPECIMEN PROPORTIONAL FIRE FACULTATIVE REINSURANCE SLIP

FIRE AND/OR LIGHTNING AND/OR EXPLOSION

Reinsured: Royal Insurance Co. Ltd.
Original Insured: The International Group, 29/31 East Street, Strand.
Cover On: Buildings/Machinery/Stocks. Furniture manufacturing.
Terms: At original gross rate less 25% commission and 2.5% brokerage
Period: 12 months at 1st March 2016
Sum Reinsured: USD 2,000,000 (80%) part of \$2,500,000
Retention: USD 500,000 Sum Insured Basis
Information: Class 3. Sprinklered,
Original gross rate: Buildings 0.25%

Machinery/Stock 0.35%

Sums insured: Buildings USD 1,400,000
 Machinery USD 700,000
 Stock USD 400,000

The Royal places this facultative reinsurance 100% with The Professional Reinsurance Company.

This is a proportional cover, so as noted under the sum reinsured above, the Professional Reinsurance Company will receive 80% of the premium, and also pay 80% of any losses.

The premium calculation is as follows:

Buildings USD 1,400,000 x 0.25%	= USD 3,500
Machinery USD 700,000 x 0.35%	= USD 2,450
Stock USD 400,000 x 0.35%	= USD 1,400
Total premium	= USD 7,350
Brokerage at 2.5%	= USD – 184
Net premium	= USD 7,166
Retained – 20%	= USD 1,433
Ceded – 80%	= USD 5,733
Less reinsurance commission – 25%	= USD -1,433
Net premium payable to reinsurer	= USD 4,300

If there was a loss to this cover of USD 500,000 then the loss would be apportioned as follows:

Total loss	= USD 500,000
Royal – 20%	= USD 100,000
Reinsurer – 80%	= USD 400,000

5.1.4. Non-Proportional Arrangement

For example: The Royal Insurance Company is offered a new risk from one of its most important clients – The International Group. The International Group want to extend their business into furniture manufacturing and intend to buy a factory currently on offer for a good price. Prior to purchase they approach the Royal through their intermediary to obtain cover.

As this furniture factory is a hazardous risk, the Royal does not want to put the risk into its automatic treaty. At the same time the Royal is able to get a good rate for the risk, and is hopeful of making a good profit if the risk runs well. On the other hand the Royal does not want to have a very large loss which could destroy the result forecast it has given to its shareholders (claim severity), so it decides to limit its potential loss to USD 1,000,000 part of a sum insured

of USD 2,500,000. It thus seeks a non-proportional facultative cover for USD 1,500,000 excess of USD 1,000,000.

CASE STUDY

Taking the example above, the Royal agrees terms with the client's intermediary and produces the following non-proportional "slip" to offer the risk facultatively to reinsurers.

SPECIMEN FIRE NON-PROPORTIONAL FACULTATIVE REINSURANCE SLIP

FIRE AND/OR LIGHTNING AND/OR EXPLOSION

Reinsured: Royal Insurance Co. Ltd.
Original Insured: The International Group, 29/31 East Street, Strand
Cover On: Buildings/Machinery/Stocks. Furniture manufacturing
Terms: 10% brokerage
Period: 12 months at 1st March 2016
Sum Reinsured: USD \$1,500,000 any one loss excess of USD 1,000,000 any one loss
Retention: USD 1,000,000 Sum Insured Basis
Excess of loss
Premium: 20.5% of original premium
Information: Class 3. Sprinklered,
Original gross rate: Buildings 0.25%
Machinery/Stock 0.35%

Sums insured: Buildings USD 1,400,000
Machinery USD 700,000
Stock USD 400,000

The Royal places this facultative reinsurance 100% with The Professional Reinsurance Company.

This is a non-proportional cover, so the Professional Reinsurance Company will receive the premium it has quoted for the cover = 20.5% of the original premium to pay any losses in excess of USD 1,000,000.

The premium calculation is as follows:

Buildings USD 1,400,000 x 0.25%	= USD 3,500
Machinery USD 700,000 x 0.35%	= USD 2,450
Stock USD 400,000 x 0.35%	= USD 1,400
Total premium	= USD 7,350
Premium due to reinsurer 20.5%	= USD 1,506.75
Brokerage at 10%	= USD – 151

Net premium payable to reinsurer = USD 1,355.75

If there was a loss to this cover of USD 500,000 then the loss would be apportioned as follows:

Total loss = USD 500,000

Royal = USD 500,000

Reinsurer = USD 0

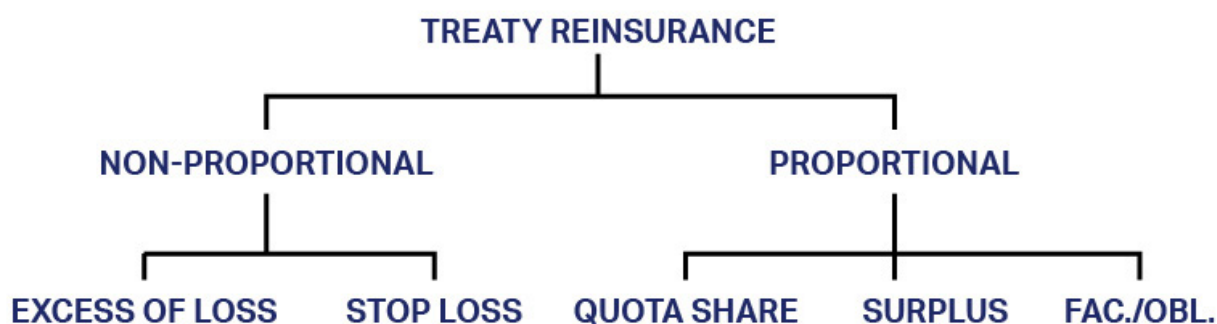
If there was a loss to this cover of USD 1,500,000 then the loss would be apportioned as follows:

Total loss = USD 1,500,000

Royal = USD 1,000,000

Reinsurer = USD 500,000

5.2. Treaty Reinsurance



5.2.1. Definition and Key Features

Treaty reinsurance is also known as “Obligatory” reinsurance. That is to say once the terms and conditions of the treaty have been agreed between the ceding company and its reinsurer(s), the ceding company must cede risks falling within the scope of the treaty and the reinsurer(s) must accept those risks. There is no option to do otherwise, except in the instance noted above 6.1.2. Advantages 4 – where the ceding company may – subject to the terms of the reinsurance treaty, and if necessary with the permission of the reinsurer(s) – reinsure facultatively certain hazardous risks which could unbalance the treaty or negatively affect the results.

The key features of treaty reinsurance are:

1. No individual risk scrutiny by the reinsurer.
2. Portfolios of business can be covered as opposed to individual risks.
3. Treaty covers are much cheaper to administrate than facultative business.
4. Risks falling within the portfolio are automatically covered.
5. Properly structured, treaties can provide good protection against both claims frequency and claims severity.
6. A long-term relationship can be established in which the reinsurer’s profitability is expected, but measured and adjusted over an extended period of time.
7. One contract encompasses all subject risks.

Reminder: There are two main types of reinsurance - Contributory or Proportional Reinsurance, and Non-Contributory or Non Proportional Reinsurance.

Under Contributory or Proportional Reinsurance the insurance company or cedant passes or cedes a proportion of its liability on an individual risk or number of risks to a reinsurer and pays the reinsurer the same proportion of the original premium for the risk or risks. In the event of a claim, the reinsurer in return will reimburse the insurer with the same proportion of the claim or claims.

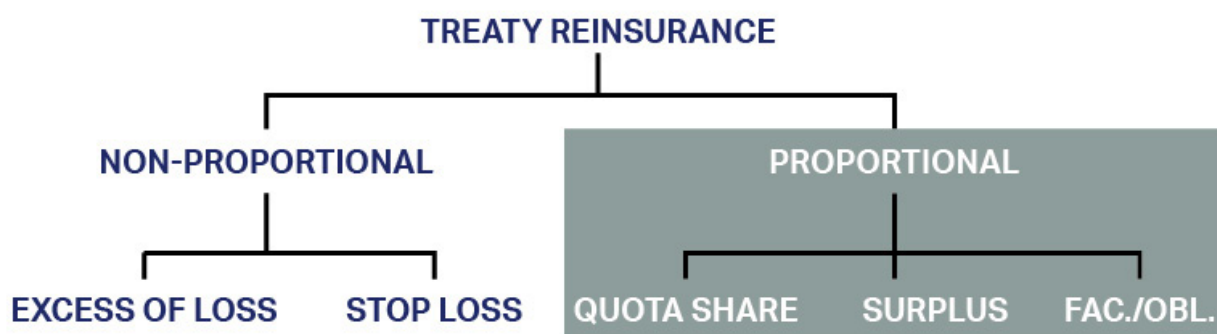
Thus if you review a reinsurance cover and find that the reinsurance is calculated as a function of the sum insured, then you are looking at a contributory or proportional reinsurance.

Non-Contributory or Non Proportional Reinsurances apply not to specific risks but to losses. They limit the amount of loss an insurance company or cedant can suffer under any one claim or event.

Unlike contributory or proportional reinsurance, the cedant does not cede risks to the reinsurer but the reinsurer agrees to pay the amount of a loss over and above, or in excess of, a fixed amount referred to as the cedant's "retention", or "deductible", or "priority". The portion payable by the reinsurer is referred to as the "cover". Thus, the cover relates to losses rather than individual risks forming the ceding company's portfolio.

Contributory or Proportional reinsurance and Non-Contributory or Non Proportional reinsurance can be placed in one of two forms – Facultative and Treaty. In this section we deal with Treaty Reinsurance.

5.2.2 Proportional Treaty Reinsurance



5.2.2.1 Quota Share Treaty

Under a quota share treaty, the ceding company is bound to cede a fixed percentage or proportion of every risk written by it which falls within the scope of the treaty. The same percentage of every risk in a class of business covered is ceded no matter how small or large the sum insured and irrespective of whether the risk is good or bad. This is the main difference between the quota share and the surplus treaty, which we will see later.

The following example illustrates this point. This example is based on a 90% quota share treaty, that is to say the ceding company retains 10% of every risk and cedes 90% of every risk falling within the scope of the treaty. On this basis, the cover would be as follows:

RISK	A	B	C
SUM INSURED	USD 100	USD 10,000	USD 200,000
CEDING COMPANY	USD 10	USD 1,000	USD 20,000
REINSURER	USD 90	USD 9,000	USD 180,000

It is very important to note that both the premiums and the claims are subject to the same percentage distribution. It is usual for the treaty to include a clause which sets out the percentage of each risk to be reinsured and also a monetary or maximum limit for the cover e.g., 90% of every risk to be ceded, subject to a maximum of USD100,000 any one risk. As a further protection for the reinsurer, it is usual for the treaty to state that ceding company would retain a certain percentage for its own account. This would ensure that the ceding company does not write bad business and reinsure everything.

Advantages of the Quota Share :

1. Its operation is simple – there is little administration and accounting is straightforward.
2. A quota share treaty provides capacity for larger risks that would otherwise be very difficult and cumbersome for the ceding company to underwrite. (It would have to seek facultative reinsurance for each risk individually).
3. There is no “selection against” the reinsurer i.e., the reinsurer gets a proper mix of business as the ceding company is obliged to cede every risk falling within the scope of the treaty, it cannot choose to cede only the poorer quality risks.
4. Generally a quota share treaty benefits from higher commission rates. The quota share, being a selection of every risk written by the ceding company within that class, passes on a larger potential share of the profit than would otherwise be retained by the ceding company, thus it usually pays a higher commission rate.
5. It allows the ceding company to reduce its commitments on each risk to much smaller amounts.
6. By considerably limiting the exposure under each risk, the ceding company requires much less capital to write a large portfolio of business and thus this type of reinsurance arrangement can be used to overcome solvency margin problems.
7. Good protection against claims frequency/severity problems as the retention of the ceding company on every risk is limited.
8. Protection applies from the first dollar, in this example the reinsurer also pays 90% of every loss from the first dollar. Thus the quota share reinsurance treaty permits recovery also on smaller losses.

Disadvantages of the Quota Share :

1. The ceding company cannot select the risks it cedes to the reinsurer and thus must cede also those risks which lie well within its own financial capacity.
2. The relative variability of expected losses on the retained portfolio would be the same as the total portfolio i.e., if the portfolio comprises very dissimilar risks, the proportion retained contains the same lack of homogeneity. The imbalance that results from the number of bigger risks is still evident in the retained portfolio.

When a quota share is often chosen :

1. It is often used by new companies entering the market for the first time.
2. Also when a ceding company is entering into a new class of business or a new area of operation especially where it has little or no experience.
3. Where a ceding company wishes to exchange business rather than just ceding its own business, a quota share treaty is a good vehicle to seek a reciprocal exchange of business.
4. For reducing a ceding company’s exposure under policies covering natural perils.
5. For classes of business where although there may be a policy limit, the incidence and size of losses are uncertain e.g., liability business.

5.2.2.2 Surplus Treaty

Under the surplus treaty the ceding company decides the limit of liability which it wishes to retain on any risk or class of risks. This limit, called the ceding company's gross retention, will be the maximum that it will retain. However depending on the treaty terms, it may retain a lower amount if it so wishes.

The surplus over and above this retention level will be allocated to one or more reinsurers on the surplus treaty. (Note: It is also possible for a ceding company to have several surplus treaties i.e. a first surplus, a second surplus, a third surplus, as will be seen later).

EXAMPLE I

The ceding company's maximum gross retention in this surplus treaty is USD 1,000 on fire insurances covering furniture workshops. Then on all such policies with:

SUM INSURED	RETENTION	REINSURANCE
USD 1,000	USD 1,000	NIL
USD 2,000	USD 1,000 (50%)	USD 1,000 (50%)
USD 3,000	USD 1,000 (33%)	USD 2,000 (67%)
USD 5,000	USD 1,000 (20%)	USD 4,000 (80%)

EXAMPLE II

On office blocks, the ceding company's gross retention may be USD10,000 on each risk. Thus on such policies:

SUM INSURED	RETENTION	REINSURANCE
USD 5,000	USD 5,000 (100%)	NIL
USD 10,000	USD 10,000 (100%)	NIL
USD 25,000	USD 10,000 (40%)	USD 15,000 (60%)
USD 100,000	USD 10,000 (10%)	USD 90,000 (90%)

The amount ceded to a surplus treaty is usually expressed by the number of "lines" it contains. Each "line" is equivalent to the ceding company's gross retention. Thus if a ceding company has a maximum gross retention of USD 10,000 and operates a 10 line surplus treaty, the treaty capacity can absorb liabilities over and above the gross retention up to USD 100,000 (i.e., USD 10,000 x 10 lines). If the ceding company's gross retention of \$10,000 is added, then the overall underwriting capacity of the ceding company is USD 110,000.

If, for any reason, the ceding company decides to retain only USD 4,000 in a particular risk, then the amount ceded to the treaty for that particular risk may not exceed USD 40,000 (i.e., USD 4,000 x 10 lines).

If the ceding company has risks where the sum insured exceeds the treaty limits, it has two options; (a) to accept the excess amount for its own account (in addition to its existing gross retention) or (b) to seek further reinsurance cover which could be on a facultative basis or by placing a further surplus treaty which would then be termed as the "second" surplus treaty. The first surplus would have priority for any sums insured over and above the ceding company's gross retention, and risks would be allotted to it first.

The second surplus would be involved in a risk where the original sum insured was larger than the amount of the ceding company's gross retention plus the amount allotted to the first surplus treaty for example:

SUM INSURED	RETENTION	1ST SURPLUS	2ND SURPLUS	3RD SURPLUS
USD 10,000	USD 10,000	NIL	NIL	NIL
USD 130,000	USD 10,000	USD 100,000	USD 20,000	NIL
USD 230,000	USD 10,000	USD 100,000	USD 100,000	USD 20,000

A situation may occur where a company decides to spread the risk evenly over its treaties to give reinsurers on the higher layers more business, to achieve this it could decide to reduce its gross retention from USD 10,000 to USD 8,000 – where the treaty terms and conditions permitted this.

There are two ways in which the limits of a surplus treaty may be stated:

1. On a “Sum Insured” limit based on a table of limits.
2. On a “Maximum Probable Loss” limit (MPL).

SUM INSURED LIMIT

This is the actual sum the risk is insured for and is thus also the maximum amount that can be claimed in the event of a loss. Thus, for a 10-line treaty where the ceding company retains USD 10,000 on any one risk, the maximum exposure of the reinsurers on any one risk would be USD 100,000 subject to any scaling down of amount in accordance with the table of limits.

MAXIMUM PROBABLE LOSS LIMIT (MPL)

Unlike the sum-insured limit, the MPL limit is not, as such, restricted (however as we will note later, the reinsurer may insist that the treaty is subject to a minimum MPL of, for example, 50%).

MPLs are commonly used in fire risks, as the property insured may not be totally damaged when a loss occurs. For example, the sum insured may be spread over several buildings, all at a considerable distance from one-another, making the spreading of fire highly unlikely.

Thus, one can estimate that, given the particulars of the risk in question, that an MPL of, for example, 10% can be applied. Taking this example, the MPL for a risk with a sum insured of USD 500,000 is estimated at 10%. Thus the ceding company decides to retain \$5,000 on an MPL basis although this still means that the company’s liability in the event of a total loss is USD 50,000. 9 lines of the treaty would be used for reinsuring the balance of the sum insured. The reinsurer’s liability would be USD 450,000 (Sum Insured) but would not expect to lose more than USD 45,000 (MPL).

While the MPL gives the ceding company the advantage of greater capacity for absorption of risks under the surplus treaty, it has the major disadvantage of making the ceding company and even the reinsurer lose more than they expected in a situation where the MPL is under estimated (in the above example they can lose 10 times more!) For this reason only companies who have considerable expertise in fixing MPL’s should use this system. Even where this is the case, cessions to a treaty on an MPL basis may be subject to a provision that the MPL will never be calculated at less than a certain percentage e.g., “the MPL for any cession to the treaty shall not be less than 25%” of the total sum at risk.

Another disadvantage could stem from a situation where the MPL is not properly defined at the inception of the contract so that it would not have the same meaning to both the ceding company and the reinsurer.

MPL can also be interpreted as “Maximum Possible Loss”, which is a much more severe calculation than “Maximum Probable Loss”. There are also the abbreviations PML – Probable Maximum Loss, and PML – Possible Maximum Loss. It is thus easy for confusion between ceding company and reinsurer to arise, and there is then a need for clarity of meaning.

THE REINSURERS' PARTICIPATION

In discussing the treaty, we assumed that the surplus was always ceded to only one reinsurer. However, in practice, this is not usually the case and indeed several reinsurers may participate in each treaty.

The reinsurers' participation may be expressed as follows:

1. 10% but not exceeding 1 line (part of 10 lines)
2. 90% but not exceeding 9 lines (part of 10 lines)

Thus, if two reinsurers participate in a 10-line treaty, based on the above example, the risks would be shared as follows:

	RISK 1	RISK 2	RISK 3
SUM INSURED	USD 10,000	USD 20,000	USD 55,000
CEDING COMPANY'S RETENTION	USD 5,000 (i.e. 1 line)	USD 5,000 (i.e. 1 line)	USD 5,000 (i.e. 1 line)
REINSURER A 10%	USD 5,00 (i.e. 0,1 line)	USD 1,500 (i.e. 0,3 line)	USD 5,000 (i.e. 1 line)
REINSURER B 90%	USD 4,500 (i.e. 0,9 line)	USD 13,500 (i.e. 2,7 line)	USD 45,000 (i.e. 9 line)

From this example it will be seen that even when the total number of lines are not used up, each reinsurer receives their proportion of each and every cession to the treaty. There is always a pro rata share for reinsurers on the same treaty.

PREMIUMS

The reinsurance premium paid by the ceding company to the reinsurer(s) is a percentage of the original premium paid by the insured. The percentage paid to the reinsurer(s) is the same as the percentage of the sum insured ceded by the ceding company. E.g.,

	CEDING COMPANY	REINSURER(S)
SUM INSURED USD 10,000	USD 5,000	USD 5,000
PREMIUM USD 20	USD 10	USD 10
SUM INSURED USD 45,000	USD 5,000	USD 40,000
PREMIUM USD 45	USD 5	USD 40

The premiums for any risks excluded from the treaty and return premiums due under canceled policies are not included in the reinsurance premium. The reinsurer will allow a reinsurance commission to the ceding company to compensate for its original commissions or brokerages, acquisition costs, costs of keeping the business on the books and administration expenses; but commissions paid by the ceding company to agents or intermediaries are not deducted from the reinsurance premium to which the commission is applied.

As the demand for reinsurance increases (because, for example, the business is desirable business for a reinsurer – e.g. well spread household insurance, or because the results of the treaty have been very good), so the level of reinsurance commission can be increased. Thus a reinsurance commission of 35% may be adequate to cover commissions paid to agents/intermediaries, acquisition costs, etc. but the business may be sufficiently desirable for reinsurers to be prepared to pay 40% or more. Another option is that the reinsurer may allow a further commission,

usually called a profit commission, if the results under the treaty merit this.

In marine and certain other classes of business, reinsurance premiums are sometimes paid on a “net” basis i.e., less original commission. Here, the reinsurer will only allow a small “over riding commission” to cover the cost of administration of the business and treaty by the ceding company.

CLAIMS

All claims falling within the scope of the treaty will be distributed between the ceding company and reinsurer(s) in the same proportions as the original sum insured was distributed. The ceding company is not allowed to collect the whole loss from only one reinsurer as all reinsurers participating in the business will be expected to bear their share.

An example :

	SUM INSURED	PERCENTAGE	LOSS
	USD 35,000	100%	USD 1,400
CEDING COMPANY RETAINS	USD 5,000	14,29%	USD 200
REINSURER A 10%	USD 3,000	8,6%	USD 120
REINSURER B 90%	USD 27,000	77,11%	USD 1,080

The reinsurer, apart from being liable for its share of the sum insured paid by the ceding company to the claimant is also liable for its share of claims’ costs such as legal fees, assessors fees etc., but it is not liable for a share of the office expenses of the ceding company. Recoveries, whether by means of salvage or by the exercise of the rights of contribution and subrogation must be shared in the same proportion as the claim between the ceding company and the reinsurers.

However, reinsurers are often not liable for payments made ex-gratia by the cedant. Ex-gratia payments are payments made by the ceding company which are not legally and contractually necessary, but made by the ceding company for commercial reasons, to keep an important client happy or to secure further business at renewal. Reinsurers will often seek to exclude such payments from the treaty contract, or demand consultation with the reinsurer prior to making any such payment.

Although claims’ payments are usually included in the accounts rendered to the reinsurer on a quarterly or half-yearly basis, and deducted from the premiums due to the reinsurer, there must also be a provision in the treaty contract that certain large claims can be paid on demand at the option of the ceding company. The ceding company may simply not have the cash to pay an unexpected large claim, and thus it needs to be able to request immediate payment of such claims from the reinsurer. This provision is known as a “Cash Loss” clause, and it states the minimum amount a claim must have before the clause can be invoked, and the time limit the reinsurer then has to transfer the money.

Disadvantages of the Surplus Treaty for the Ceding Company :

The cost of administration of this type of business is relatively high as the percentage distribution of each risk will be different. At the same time the reinsurance commission is usually lower than that of a quota share treaty.

Disadvantages of the Surplus Treaty for the Reinsurer :

There are inherent characteristics of selection against the reinsurer, which come about when the ceding company decides to keep a higher proportion of the good business and cede a higher proportion of the less desirable risks to the reinsurer. The ceding company by so doing increases its profit through the retention of the good business while the losses are reduced by passing on the less desirable risks to the reinsurer.

Advantages of the Surplus Treaty for the Ceding Company :

One of the main functions, and advantages, of the surplus treaty is to give the ceding company an efficient way to establish “size homogeneity”. The surplus treaty gives the ceding company the ability to control the size of its retained liability under each risk in order to allow the law of large numbers to operate with maximum efficiency. The reinsurer absorbs the wide variance of size.

Thus, for example, the ceding company can retain USD 10,000 on an office block, and also USD 10,000 on an oil refinery and USD 10,000 on a large factory, while ceding to the reinsurer USD 50,000 on the office block, USD 150,000 on the oil refinery, and USD 85,000 on the large factory.

At the same time by being able to scale the sum insured according to different types of risk, the ceding company can take lesser amounts on the less desirable risks, thus maintaining the quality of the retained portfolio by being able to take more on the better risks and less on the less desirable risks.

Advantages of the Surplus Treaty for the Reinsurer :

As ceding companies improve their expertise and become more established in a marketplace it is a fact of life that they become more confident in their ability to underwrite risks and manage their portfolio. It is then normal that they want to retain more of the business.

If equally the reinsurer has confidence in the abilities of the ceding company, then generally the reinsurer will be able to retain a certain volume of premium income by entering into surplus arrangements with the ceding company.

Should the ceding company prefer to change its programme from a proportional programme to mainly a non-proportional programme (see below) then the loss of premium for quota share and surplus reinsurers can be significant.

5.2.2.3 Facultative Obligatory Treaty

This is a treaty which combines some of the principles of both the facultative and the treaty method of proportional reinsurance.

It makes it possible for the ceding company, at its discretion, to offer certain selected risks to the reinsurer, which the latter is obliged to accept under the terms and conditions stipulated in the treaty.

Under this arrangement, a high degree of trust must exist between the contracting parties to ensure that the reinsurer receives a reasonable spread of risks as considerable flexibility is provided to the ceding company.

The primary function, when placed in addition to a surplus treaty, is to give the ceding company automatic reinsurance in excess of the capacity of its surplus treaty/treaties.

Thus it may be arranged simply for additional capacity to expand and develop existing accounts. It may also help the ceding company to maintain acceptance shares on large, so called, “target” risks or where accumulation problems may arise. Additionally, in circumstances where the degree of hazard requires the ceding company to limit its own retention, it may be used to cover specific categories of risks which could be of interest to the reinsurer.

The disadvantage of this arrangement is that the risks that may be ceded to this treaty are likely to be fewer and larger than those ceded to surplus treaty, thus producing even less balance for the reinsurer.

“Balance” in a proportional treaty is the amount of loss a treaty can sustain, while still making a profit. If a treaty has a risk limit of USD 250,000 and a net premium to reinsurers of USD 5,000,000 over a number of risks, it can absorb 20 full losses without the treaty going into a loss. Such a treaty, on the face of it, looks to be very well balanced.

If a treaty has a risk limit of USD 250,000 and a net premium to reinsurers of USD 250,000, such a 1:1 balance may suffice depending on the quality of the business and the expected loss frequency.

If a treaty has a risk limit of USD 250,000 and a net premium to reinsurers of USD 50,000, then the balance is 1:5. Five years’ worth of premiums will be required to cover one full loss. If such a treaty has even several medium sized losses, it may never recover to a profit even after a number of years. Such a treaty is not well balanced.)

5.2.2.4 Case Study

A ceding company may often combine a quota share with a surplus treaty are combined with each other to cover a particular class of business.

Under this circumstance, cessions are first made to the quota share treaty and, once the limit under that treaty is exhausted, further amounts are ceded to the surplus treaty.

Under the quota share treaty, the ceding company reinsures its gross retention. This gross retention is equal to the “line” on which the surplus treaty is based. It is important to stress that it is the “gross” retention i.e. the whole of the underlying quota share, that is considered as the “line” under the surplus treaty, as opposed to the “net” retention of the ceding company, which is limited to the share the ceding company retains under the quota share treaty. The difference between gross and net retentions is shown in the following examples:

QS treaty limit = USD 200,000 any one risk

The ceding company’s net retention under the quota share is 20% = USD 40,000 any one risk

The surplus treaty has a limit = 10 lines.

Based on the “gross” retention of the ceding company, the surplus treaty thus has a capacity of USD 2,000,000 any one risk. (If it was based on the “net” retention, the surplus treaty would only have a capacity of USD 400,000 – a big difference).

Under the above example, all risks up to a USD 200,000 sum insured would be ceded to the quota share treaty and the ceding company would retain 20% of the amounts ceded.

Any balance of sum insured over USD 200,000 would be ceded to the surplus treaty, up to a maximum of USD 2,000,000 (if the gross retention of the cedant is applied). On either basis, the ceding company is never exposed for more than USD 40,000 for its own account.

It can be seen that it is extremely important, once again, to have clarity of meanings, in this case to determine whether the surplus treaty, when arranged in conjunction with a quota share, is based on the net or gross retention, as the difference in monetary limits can be considerable.

EXAMPLES

Based on the above figures:

QS treaty limit = USD 200,000 any one risk

Cedant’s 20% = USD 40,000 any one risk

Surplus capacity = USD 2,000,000 any one risk based on gross retention

Example 1 :

Risk sum insured = USD 100,000

Distribution:

Cedant’s retention = USD 20,000 (20% part of 100% of the risk which falls 100% within the QS capacity)

QS cession = USD 80,000

Surplus cession = USD 0

Example 2 :

Risk sum insured = USD 2,000,000

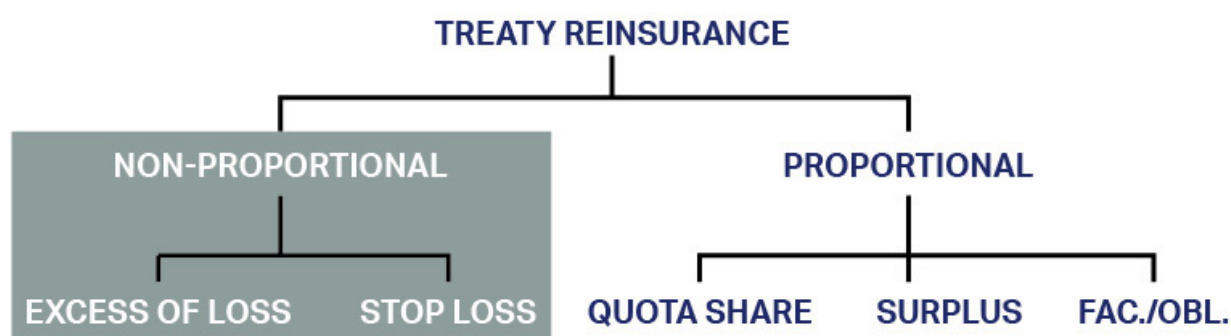
Distribution:

Cedants retention = USD 40,000 (20% part of QS capacity of USD 200,000)

QS cession = USD 160,000 (80% part of QS capacity of USD 200,000)

Surplus cession = USD 1,800,000 (being the balance which is within the surplus total capacity of USD 2,000,000)

5.2.3 Non-Proportional Treaty



Non-proportional treaties do not apply to specific risks but to losses. Non-Proportional treaties limit the amount of the ceding company's loss for any one claim.

The ceding company does not cede risks; the reinsurer agrees to pay the amount of loss over and above (in excess of) a certain amount (variously referred to as the "retention", the "deductible" or the "priority"). The reinsurer then agrees to pay an amount up to an upper limit, referred to as the "cover" or "limit". Thus a reinsurer might agree to cover the ceding company for USD 50,000 any one risk (cover or limit) excess of USD 10,000 (the retention or deductible or priority).

Non proportional treaties take one of two forms: -

1. The Excess of Loss treaty, which provides cover on a "per risk" basis or on an "event" or "occurrence" basis.
2. The Stop Loss treaty, which covers a whole portfolio of risks, or even the whole account of a ceding company.

Advantages of Excess of Loss treaties for the Ceding Company :

- The ceding company obtains protection only against the large losses that could strain its financial capacity. It therefore assists the cedant in cutting off its potential liability at a chosen monetary limit.
- This results in an increase in the amount of premium retained for net account because the reinsurer is not involved in the more frequent small losses below the deductible.
- Administration is much simpler than for a proportional treaty and the administrative costs are consequently much lower. The ceding company is not required to maintain a table of retention limits for each risk, nor calculate cessions of risk.

- It provides a better cash flow situation as lower amounts of premium are paid to reinsurers and claims are recoverable immediately a loss is paid.

Disadvantages of Excess of Loss treaties for the Ceding Company :

- If the original insurances are inadequately rated, the excess of loss reinsurer has the freedom to quote rates on the basis of its own experience for such business. The difference in pricing has to be borne by the cedant.
- Normal excess of loss treaties offer protection to the cedant for the losses over its deductible (i.e., the treaty takes care of the loss severity aspect). But if there is an increase in the frequency of losses, especially below the deductible, it may create a great strain on the cedant's financial position as it cannot recover anything from the excess of loss treaty for such losses.
 - The arrangement is thus likely to result in a greater volatility of results for the ceding company.
 - The future cost of cover is difficult to assess as the reinsurer may take into account the global results of a marketplace, or even its own global results when reacting to a series of large losses.
 - The company cannot use non-proportional business for reciprocity.
 - There can be challenges to structure the right amounts of cover, especially in the case of natural perils – how many events to cover, and where the cover is on a risk basis – how many individual claims to cover. Generally the amount of reinsurance cover is subject to an event or risk limit, but this amount can be reinstated upon payment of an additional premium. These terms are contained in the treaty in the reinstatement clause.
 - Unlike proportional treaties, non-proportional reinsurances provide little or no assistance in financing the expansion of the ceding company's business, for example, the reinsurance premium is payable in advance even before the cedant has received premium from the insured(s). Also, it receives no ceding commission or profit commission.

Advantages of Excess of Loss treaties for the Reinsurer :

- The reinsurer has more control over the terms of the cover.
- Improved cash flow, as premiums are generally payable on 1st January or half yearly, while claims are only payable if, and when, they are paid by the ceding company.
- The reinsurer can adjust pricing annually, and can also reprice if additional reinstatements are necessary during the term of the cover.

Disadvantages of Excess of Loss treaties for the Reinsurer:

- There is less community interest with the ceding company, there is no concept of “follow the fortunes” and therefore potentially much less continuity.
- The volume of premiums is much lower than participating in a ceding company's proportional business, thus the reinsurer has much less turnover.
- Where business is long term – such as motor casualty business, there can be challenges to properly reflect inflation and “incurred but not reported” (I.B.N.R.) claims.

5.2.3.1 Risk Excess of Loss Treaty

Under a “per risk” excess of loss treaty the reinsurer pays any loss on an individual risk in excess of a predetermined amount up to a specified upper limit. This ensures that the exposure of the company (claims severity) is reduced to a fixed sum. However a per risk excess of loss treaty does not offer any protection against any accumulation

of losses arising out of one event or an aggregation of losses occurring within a calendar year (claims frequency).

The per risk excess of loss cover is also referred to as a “working” excess of loss reinsurance when claims are likely to occur with a certain frequency. Working excess of loss reinsurance treaties are often used for fire and allied perils as well as for marine cargo accounts.

Example of a per risk excess of loss cover :

The ABC Insurance Company has decided to have a net retention of USD 100,000 on all textile risks in its portfolio. It protects its net retention with an excess of loss cover of USD 60,000 in excess of USD 40,000 which means that the reinsurer pays up to USD 60,000 after the cedant has paid at least USD 40,000. For example, if a loss of USD 75,000 for the net retention of ABC occurs in a factory, the ABC Company would pay its share i.e., USD 40,000 and the reinsurer will reimburse the sum of USD 35,000.

5.2.3.2 Catastrophe Excess of Loss Treaty

The term “catastrophe” excess of loss is usually used to describe the “per event” or “per occurrence” cover. Such reinsurances are frequently arranged to protect property insurance accounts covering fire and natural perils, and marine portfolios where a particularly severe incidence of a catastrophic nature may affect a number of policyholders at the same time.

Example of a catastrophe excess of loss :

A storm causes 1,000 losses of USD 5,000 each on policies covering private residences that all fall within the ceding company’s net retention. If the ceding company has a non-proportional cover of USD 4,000,000 excess of USD 500,000 the above loss will be distributed in the following manner;

Total loss	= USD 5,000,000 (1000 x USD 5,000)
Cedant’s retention per event	= USD 500,000
Recovery from reinsurer	= USD 4,000,000
Additional un-reinsured amount payable by the cedant	= USD 500,000

5.2.3.3 Stop Loss Treaty

The role of the Stop Loss treaty is to protect the annual result of the ceding company in one class of business against negative volatility due to a marked increase in the size and number of losses in that class of business.

The reinsurer under the Stop Loss treaty covers losses incurred by the cedant in a particular class of business when the cedant’s annual loss ratio exceeds an agreed percentage of the premium income for that class.

All the losses suffered by the cedant for the year are added up and any loss, no matter how small, over and above the agreed loss ratio is covered.

The reinsurer’s limit and the ceding company’s retention are expressed as percentages, although it is also common for the reinsurer’s limit to be expressed in a monetary amount as well. For example, “to cover 30% of all losses in excess of a loss ratio of 90% up to and including a loss ratio of 120% with a maximum loss to the reinsurer of USD 100,000». From the above, there is also the result that losses over the 120% loss ratio revert back to the cedant but it can of course choose to arrange for this to be covered by another reinsurance cover, where pricing permits.

Example of a stop loss cover :

Crop business can be a very volatile business, where large profits or large losses usually occur due to the nature of the business. The ceding company thus decides to protect the results of its crop account, by placing a cover of 30% in excess of an annual loss ratio of 90%. At the end of an accounting year it is found that the loss experience is 120%. The reinsurer is thus liable for the 30% that exceeds the 90% retention of the cedant.

These types of cover can expose the reinsurer to potential abuse, especially if the ceding company is trying to guarantee itself a profit.

For example if the ceding company's expense ratio is 30% in a class of business, then if it buys enough stop loss protection excess of only 70% of its retained income, it cannot ever make a loss. It is clearly not the job, nor the intention, of reinsurers to offer a financial guarantee to a cedant, for in allowing this to happen, prudent underwriting is removed.

Therefore, cover is only granted at a level that ensures that a cedant has already suffered a material loss to its retained account.

Furthermore, the reinsurer often requires the cedant to act as co insurer for a part of the cover (for example a co-insurance of 10%) as an additional incentive to maintain a sound underwriting policy.

The reason why the reinsurer will also include a monetary limit in the treaty is in order to know its maximum commitment in advance. The treaty is not intended to give the ceding company a blank cheque which it could be if the cedant could choose to write as little or as much business as it wanted to. Thus the reinsurer not only expresses the cover it provides in percentage terms but also makes it subject to a monetary limit. This also helps the reinsurer to retain some control over the balance of its own account.

Stop loss treaties can be expensive. For this reason they are often unattractive to ceding companies.

5.2.3.4 Case Study

It is important to be able to clearly distinguish between risk covers (claims severity) and event covers (claims frequency).

Example :

The XYZ Insurance company has an excess of loss treaty covering its property business for USD 450,000 in excess of USD 45,000 any one event. A fire occurs damaging three adjacent buildings. The loss for repairs is USD 15,000 for the first building, USD 20,000 for the second, USD 45,000 for the third. The event that caused the damage is the same for the three buildings and the aggregate loss for the event is USD 80,000. The reinsurer therefore pays USD 35,000 (i.e., the amount in excess of USD 45,000), as the cover has been arranged on an "an event" basis.

If however the loss had been covered on a "per risk" basis, then the loss on a "per risk" basis arising out of one event is taken into consideration. In the above example, as none of the individual losses exceed the priority (USD 45,000), the reinsurer has nothing to pay.



6. REINSURANCE STRUCTURES

Learning objective: To understand the process of putting a reinsurance programme together, objectives and influencing factors. How to best review retentions and to understand how losses flow through different reinsurance-structures. To be able to test the robustness of a proposed structure against different loss scenarios.

6.1 The objectives of a reinsurance programme

Every insurance company has its own peculiar mix of business, and mix of talents and level of willingness to take risk, from ignorant recklessness to wise conservatism. At any given moment in time, every insurance market has its mix of competitors, and an insurance company wishing to work in that market must live with this situation. In a reckless, highly competitive market, the company must be particularly sensitive to client quality at lower prices, while in a hard market premium harvesting may have value.

The reinsurance market will equally have its cycle, and this cycle may be very different from the insurance market cycles faced by the cedant, and the cedant also needs to understand this cycle too.

The prime objective of a reinsurance programme is to control volatility. Volatility arises especially with lack of homogeneity and lack of large numbers. Through careful ceding of risks and capping of losses, a ceding company can improve its portfolio mix and thereby improve volatility, providing more stable results for its stakeholders.

Secondly no insurance company can stand still, either the push forward comes from the board of directors and senior management, or the shove comes from the market i.e. “meet the changing requirements of customers or fail.” Reinsurance is a vehicle to manage capital needs, and to finance growth. Many reinsurers can also assist to offer new insurance products.

Other objectives may include the need to meet regulatory or rating agency requirements, to better position the company for a takeover, or to avoid a takeover, to prepare for upcoming major changes in law, or even an upturn or downturn in the market.

Clearly pricing is also a major driver in all aspects of designing a reinsurance programme and competitiveness. If the majority of competitors in the market are taking more risk, buying less cover and giving higher dividends to shareholders, there is always a pressure not to fall too low in the rankings and risk a fall in shareholder value and alienating investors. Many investors do not appreciate lower dividends.

6.2 Factors which influence programme design

1. Risks and losses.

As already noted above, a cedant needs to consider what types of risks and losses it will encounter. How much business will be short-tail, and how much long-tail. In each category will losses likely settle relatively quickly, or rather slowly? As regards long-tail with slow settlements, is claims discovered or claims made more appropriate than losses occurring or policies issued.

2. What is the financial position of the company and its capital needs for growth? Is a proportional programme more appropriate for most of the business as financing is an important factor, or is non-proportional more appropriate as the company is well financed, including for growth, and a lean and simple programme is more appropriate?

3. What are competitors doing? If they are heavily into non-proportional their retained premium income will be high, if more into proportional, the retained premium income will be much lower, what market position is best?

4. What is the situation in the insurance marketplace? Is the trend to softening or hardening? Would the cedant be prudent to try to buy more cover in a softening market, consequently less cover in a hardening market? Are there legal, economic, or political factors which could have a material influence on the business and change the reinsurance requirements? Is or could sanctions be an issue?

5. What is the situation in the reinsurance marketplace? Are there reinsurers with good ratings looking to expand in the marketplace in which the cedant operates. Better they work with the cedant rather than a competitor. Where is the best, and cheapest capacity – proportional or non-proportional? Is it easier to place higher or lower excess layers, or is there more demand for second, third, fourth level surplus treaties?

6. What is the position with existing reinsurers on the cedant's current programme? Have long term partnerships been established under certain cessions? What flexibility is there to improve terms under existing treaties? What is the profit or loss position under each and every treaty, and the impact on reinsurers with whom the cedant has good relationships? What are the expectations of reinsurers who have proved to be helpful and faithful in the past? What flexibility does the cedant have in this regard?

7. What administrative challenges result from having answered the questions above? Does the cedant have or can it recruit, the necessary resources to be able to meet those challenges?

8. What advice and help does the cedant need? Who is best positioned to give that advice – reinsurers with whom the cedant has a good relationship, reinsurance intermediaries with whom the cedant has a good relationship, is there a need for looking to new advisers?

6.3 Setting retentions

There is no formula for calculating retentions that can be applied to any company in any circumstance. Important elements are certainly the financial strength of the company, its risk tolerance, and its portfolio composition. Also the more volatile its portfolio(s), the more reinsurance it needs to achieve a stable level of results.

On the one hand there will be a minimum retention that reinsurers will expect a cedant to keep to show that the cedant indeed has a material financial interest in its own business. Probably a figure starting around 10% is likely to be seen as a minimum. So it is unlikely that a cedant will get much reinsurance support if it is ceding away in excess of 90% of its premiums, except in certain special circumstances such as very high value market risks, or fronting requests. Similarly there may be local regulations that do not allow a cedant to take credit for more than, for example, 75% of its premium volume being reinsured. Thus there may be capital constraints if the cedant tries to reinsure too much of its business.

Ideally a single loss should never have an impact on the portfolio in question of more than between 1-5% (increase in loss ratio) depending on the expected number of large losses, and a major catastrophe loss between 5-15% (increase in loss ratio). Large losses may be easier to foresee depending on the size and homogeneity of the portfolio and sums insured, catastrophes can be much more difficult, not only because severity damage can vary significantly between hazards such as wind, flood and earthquake, but severity can also be an issue. Taking return periods of 100-250 years, or probabilities at 1% or lower again needs to be viewed in the context of the portfolio being considered. The 100 year event can happen this year or next, if it does happen what will be the impact on the company?

Another variable that can be considered is capital and free reserves. Once again a large loss should not stress this factor by more than 2-3%, and a major catastrophe by not more than 10-12%, but again this depends on how many portfolios could draw on this contingency, and thus the potential number of large losses/catastrophes.

Again reinsurance prices, competition in the marketplace and expected economic and political developments are all relevant to the calculation. But the failure of an insurance company in the insurance marketplace is bad news for everyone, and the wise cedant will always err on the side of caution.

6.4 Combining proportional and non-proportional covers

The challenge with proportional business is the potential loss of premium/profit on the smaller business that often could be retained, but is needed to give balance to the overall cessions, versus relying on non-proportional covers which only give protection over a defined number of losses. The best balance is likely to be choosing a net retention that maximises retention of the smaller, homogenous risks, while still giving reasonable balance to any quota share and first surplus treaty, and then buying non-proportional protection on the net retention down to a net net retention that shows reinsurers that the cedant has a material interest in the result of the business, but losses to the net net are not going to put the capital and free reserves into jeopardy. Refer to the case study on page XX.

The above balance is, of course, subject to the financial condition of the cedant. If current regulation in the market is, for example, that admitted assets of the cedant must exceed the liabilities by at least 20% of net premium written, then the cedant needs to ensure that the net premium resulting from its current portfolio plus expected growth in the coming year is comfortably below this threshold, and that proportional cover is in place to cede the bulk of any premium that will cause the company to breach the solvency margin threshold (non-proportional costs being taken into account for the remainder). Thus net written premium is the result not only of subtracting premium ceded by way of proportional reinsurance, but also the premium paid for excess of loss covers on the retention of the cedant.

For example, if assets exceed liabilities by 1,000,000, and net premium written is 10,000,000, then the excess assets are only 10% of the net written premium, and the company is below the minimum solvency margin required. Either the company must increase its net assets, for example, by increasing its capital, or it must increase its reinsurance cessions to bring the net written premium below 5,000,000.

6.5 Scenario analysis, examples of running losses through various structures.

Scenario analysis imagines situations which could arise in the future and, in the context used here, the impact of those events on the reinsurance structure being considered.

- For example, a lorry transporting petrol crashes into an electricity pylon in the centre of the capital city and explodes, causing death, injury, damages within a circle of 400 metres from the crash.

10 buildings are damaged to various degrees, 3 of the buildings are also clients and insured by the ceding company. Damage to the 7 buildings not insured by the ceding company is 5,000,000, and damage to the buildings insured by the cedant is 250,000, 1,200,000 and 2,550,000.

5 people are killed, 37 are injured, 8 with critical injuries, 2 are likely to be paraplegic. 1 of the people killed is insured by the cedant, also 5 of the injured including 1 of the paraplegics.

How to proceed?

Perhaps the first question is: Does it look like the lorry driver is liable, or could another factor be liable – e.g. another vehicle caused the accident, the lorry was just serviced, and someone failed to properly bleed the brakes, or a wheel was not correctly refitted ... or someone walked out negligently in front of the vehicle and the driver swerved to avoid that person.

What is the situation if the lorry driver is liable? Certainly other insurers will then seek recoveries from the cedant. What about the cedant's own insureds – the 3 buildings already insured by the cedant, and the 6 persons injured who are insured by the cedant? Can the cedant subrogate against itself, such that the reinsurers of the lorry pay all the claims? How do the treaty wordings cover such situations? As it may take more than 1 year before the courts establish who was liable, how should the cedant proceed in the interim? Perhaps if the lorry driver is found 100% liable, and the reinsurers of the lorry driver must pay all claims, then it is a full loss to the motor excess programme, on the other hand if the lorry driver is not 100% liable or not liable at all, then the cedant can subrogate in full to another insurer. How to deal with such a situation? Again not only with regard to immediate payments, but also how to set up outstanding losses, and possibly how to deal with the claim during the various renewal negotiations.

- Flood scenario .. or other natural catastrophe such as storm or earthquake, whichever is more likely to affect the ceding company.

What classes of business could be affected? Property? Liability? Marine? Life? Personal accident? Sickness? Aviation? Energy? Engineering? Equally, for example, what liability classes? Motor? Public liability? Professional liability? Directors' & Officers'?

What degree of flooding, or storm or earthquake is necessary for a catastrophic loss? For example an earthquake at 4, or 5 or 6 on the Richter scale? What is an estimated probability of the different events? How would the reinsurance programme respond to such events? Is there enough cover for expected events?

- Taking several of the Lloyd's scenarios mentioned above such as two passenger aircraft colliding over the capital city or an insured cargo ship colliding with a large cruise liner – is this a scenario which could occur for the cedant? If so how much could it cost? Which reinsurances would be affected? Has cover been so negotiated that claims would not be excluded? How would the losses be apportioned? Are there any gaps in cover?

Finally such analysis should also cover the resources required to adjust and process claims. Apart from policy wordings that make it easy for the insured to advise the company of a loss, are there adequate qualified employees of the cedant to interact with insured clients, to process the claims and to correctly apportion the claims among the various treaties and facultative cessions and to keep all reinsurers advised? Does the company have sufficient liquidity to pay any sums required in the short term, are there plans to create more liquidity if necessary, or to ensure cash loss advices are promptly sent to reinsurers?

6.6 Consideration of alternative risk transfer methods.

Alternatives to traditional reinsurance require enhanced expertise and often a greater degree of courage or willingness to take a different kind of risk. The enhanced expertise includes the ability to understand different types of non-traditional cover, and the local laws and regulations which may specifically apply to such transactions. It may also be necessary to involve the auditors of the company, and perhaps the local regulator. The courage needed is to do something different from the flock of competitors. By going, by definition, the non-traditional route, the cedant cannot hide behind the flock if something goes wrong – I did what everyone else was doing! The rewards of being non-traditional can be high, but the risks of sticking one's head out when others prefer to sit behind the wall can be risky too.

Reinsurance is traditionally purchased in towers based on class, thus a cedant will buy a tower of marine cover, a tower of property cover, a tower of liability cover. Each tower may comprise of proportional and/or non-proportional treaties, plus facultative cessions, but each tower is separate and distinct.

Portfolio theory is based on the assumption that diversity reduces volatility. Thus by combining the towers of cover, especially at the lower levels, one can maximise reinsurance premium effectiveness.

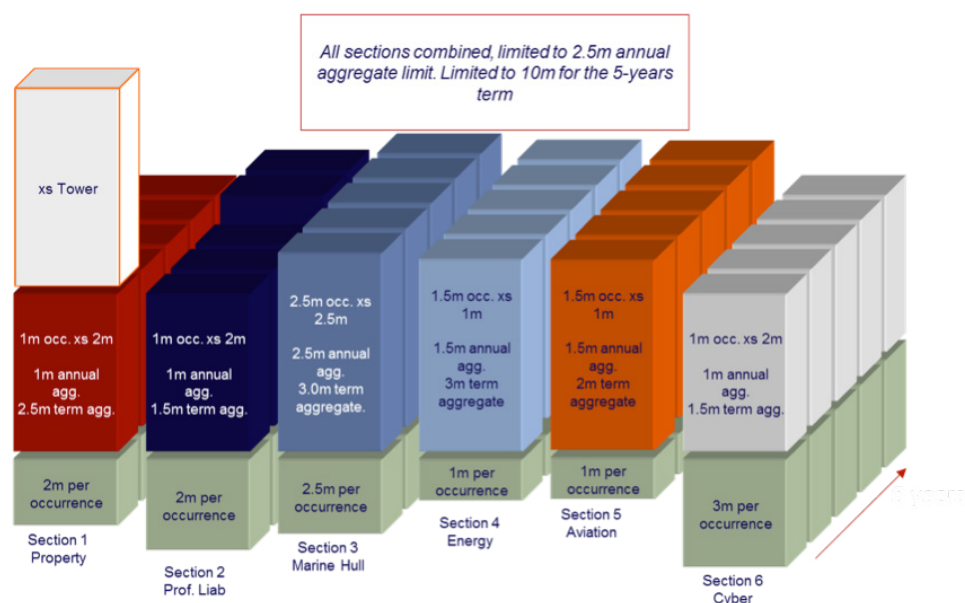
Below is a view of a portfolio of business. It covers a number of traditional classes and also a newer and more difficult to assess class – cyber.

The desire of the cedant in this case is to pool its low layer covers and the risk premium for those layers and, by thus reducing the volatility of the whole, to hope that reinsurers will be willing to cover the additional risk of cyber.

The cedant relies on the fact that while say the annual probability of loss in each section is 50%, the overall probability for all sections combined, over the extended period of five years, will be less, and often modelling will prove this.

The reinsurer, also through modelling, will hope that the combination of annual and term aggregates and expected premium will enable it to make a profit.

A portfolio view



Much will depend on the modelling assumptions and a good awareness of where the model is especially sensitive to adjustments. By good negotiation of the different annual and term aggregates, one side or the other will gain advantage and tip the balance of profitability in their favour.

However either way, such a structure can be a win-win for both parties, as it is expected that the reinsurer should be paid for the services it provides, and at the same time the cedant has been able to obtain cover for a difficult class of business without additional premium. (The trade-off for the cedant however are the aggregates to which it is now subject).

Non-traditional cover can range over many issues, and this multi-year, multi-line is but one example. As long as there is at least 10-15% risk transfer – that is to say that the reinsurer can lose at least 10-15% more than the premium it receives, and cover is not retroactive for known losses, structures will have a good chance of acceptance by local regulators in many jurisdictions.

6.7 Pricing logic / affordability

Understanding pricing is an essential part of the process of designing a reinsurance structure. It is important also to understand, given the risk-taking appetite of the cedant, where the necessary level of cover lies. If there is a gap, this must be addressed. Pricing should not only be viewed as reinsurance premium cost. Cutting out less profitable business may come with the price of losing clients, hiring more expensive, but hopefully more qualified employees may come with the price of reduced overall profits, equally the cost of a better computer system. Doing more co-insurance or taking smaller shares in risks also has its price, but improved understanding of risks retained and a better management of them may reduce the need for reinsurance and thus optimise the reinsurance spend.

But there is no substitute for understanding how reinsurance pricing is derived, and where the areas of sensitivity are. Negotiation is all about these areas. Is it better to have a fixed commission and a profit commission rather than a sliding scale commission? Is it better to allow the reinsurer its exclusion list, rather than reduce commissions? Is it better to increase the deductible under an excess of loss treaty, or go with higher pricing? Is it better to have three layers of cover, or only two? Is it better to have one reinstatement at pro-rata as to amount only, and the second at pro-rata as to time and amount, or vice-versa? So much depends on the make-up of the portfolio and the historic losses and thus the resulting pricing parameters. The negotiating side that has done its homework best will often get the best deal.

Finally “there is no profit without risk”, and insurance companies are in the business of risk, thus if a reinsurance programme is really not affordable or it is more expensive than that of competitors, then clearly the cedant is doing something very wrong.

CASE STUDY

Let's try to bring together the elements above by applying the principles to a simple case study.

The ABC Insurance Company has been operating in the local market for a number of years. It has a relatively new CEO, Mr. Langa, who wants, for the forthcoming renewal season, to “start with a blank piece of paper” and re-think the company's reinsurance programme with a view to optimising on profits, and keeping the structure as simple as possible.

The basic information on the company is the following:

EXAMPLE OF ABC INSURANCE COMPANY

Admitted assets must exceed liability by	20% of the net premium
Admitted assets exceed liabilities by	1 000 000
Thus maximum premium for solvency purposes	5 000 000
Projected gross premiums for the next year	10 000 000
Breakdown	
Property	3 000 000
Motor	7 000 000

The solvency regulations in the country require that admitted assets must exceed liabilities by 20% of the net premium. As the excess of assets is 1,000,000, the maximum net premium the company can write for solvency purposes is 5,000,000,

Based on the company strategy going forward, the company intends to write 10,000,000 for the following year, broken down 3,000,000 property business and 7,000,000 motor business.

The motor account

The motor account has not been good historically, but since becoming CEO, Mr. Langa has worked hard with the motor department manager to cut out poor business and concentrate on writing for profit. The results have been the following:

MOTOR ESTIMATED ULTIMATE RESULT

YEAR	PREMIUM x000	INCURRED LOSSES x000	LOSSES RATIO
2008	7 517	5 186	69%
2009	7 738	6 423	83%
2010	7 341	5 505	75%
2011	7 927	6 104	77%
2012	8 747	6 998	80%
2013	8 160	5 794	71%
2014	7 813	5 469	70%
2015	7 323	4 833	66%

By cutting premiums since 2012, Mr. Langa reckons the loss ratio has been improved by a massive 14 percentage points, and by further cutting down in 2016 to an expected premium of 7,000,000, Mr. Langa hopes to improve the loss ratio yet further.

In recent years ABC was obliged to drop commission to 22.5%, below their own costs, to maintain the quota share treaty, and the lead reinsurer has decided to pull out completely of motor business at the end of 2015, so there is a need to find a lead reinsurer as well.

Mr. Langa does some calculations based on the last 8 years of statistics. It is clear from the data given below that while there is a good story to tell of improving results supported by solid data, nevertheless, based on past results, the average profit for reinsurers has not been good.

MOTOR ESTIMATED ULTIMATE RESULT

YEAR	PREMIUM x000	INCURRED LOSSES x000	LOSSES RATIO	DESIRED COMMISSION	RESULT
2008	7 517	5 186	69%	27%	4%
2009	7 738	6 423	83%	27%	-10%
2010	7 341	5 505	75%	27%	-2%
2011	7 927	6 104	77%	27%	-4%
2012	8 747	6 998	80%	27%	-7%
2013	8 160	5 794	71%	27%	2%
2014	7 813	5 469	70%	27%	3%
2015	7 323	4 833	66%	27%	7%

COMMISSION LEVEL DESIRABLE	27%	AVERAGE	-1%	PROFIT FOR REINSURER
COMMISSION LEVEL NEEDED	25%	AVERAGE	-1%	PROFIT FOR REINSURER

Mr. Langa feels that going for a fixed commission might be difficult, and as he is convinced that results will now improve, he decides to consider a sliding scale commission.

He considers the following sliding scale:

SLIDING SCALE COMMISSION TABLE

COMMISSION	Loss RATIO	COMMISSION	Loss RATIO
20%	85%	25%	75%
20.50%	84%	25.50%	74%
21%	83%	26%	73%
21.50%	82%	26.50%	72%
22%	81%	27%	71%
22.50%	80%	27.50%	70%
23%	79%	28%	69%
23.50%	78%	28.50%	68%
24%	77%	29%	67%
24.50%	76%	29.50%	66%

Based on historical results this produces the following picture:

MOTOR ESTIMATED ULTIMATE RESULT

YEAR	PREMIUM x000	INCURRED LOSSES x000	LOSSES RATIO	COMMISSION PER SLIDE SCALE	
2008	7 517	5 186	69%	28.0%	3.0%
2009	7 738	6 423	83%	21.0%	-4.0%
2010	7 341	5 505	75%	25.0%	0.0%
2011	7 927	6 104	77%	24.0%	-1.0%
2012	8 747	6 998	80%	22.5%	-2.5%
2013	8 160	5 794	71%	27.0%	2.0%
2014	7 813	5 469	70%	27.5%	2.5%
2015	7 323	4 833	66%	29.5%	4.5%

AVERAGE 1% **PROFIT FOR REINSURER**

This is also not a convincing picture to sell, despite the story of the improving results.

Mr. Langa alters the sliding scale commission as follows:

SLIDING SCALE COMMISSION TABLE

COMMISSION	Loss RATIO	COMMISSION	Loss RATIO
18%	85%	23%	75%
18.5%	84%	23.50%	74%
19%	83%	24%	73%
19.5%	82%	24.50%	72%
20%	81%	25%	71%
20.50%	80%	25.50%	70%
21%	79%	26%	69%
21.50%	78%	26.50%	68%
22%	77%	27%	67%
22.50%	76%	27.50%	66%

There is now only a marginal increase on the desired level of commission, but the overall statistic looks a little better based on historic results as below:

MOTOR ESTIMATED ULTIMATE RESULT

YEAR	PREMIUM x000	INCURRED LOSSES x000	LOSSES RATIO	COMMISSION PER SLIDE SCALE	
2008	7 517	5 186	69%	26.0%	5.0%
2009	7 738	6 423	83%	19.0%	-2.0%
2010	7 341	5 505	75%	23.0%	2.0%
2011	7 927	6 104	77%	22.0%	1.0%
2012	8 747	6 998	80%	20.5%	-0.5%
2013	8 160	5 794	71%	25.0%	4.0%
2014	7 813	5 469	70%	25.5%	4.5%
2015	7 323	4 833	66%	27.5%	6.5%

AVERAGE 3% **PROFIT FOR REINSURER**

Mr. Langa now feels he has some options in negotiations with reinsurers with regard to a motor quota share, and the possibility to introduce a revised commission format which can improve the net results for the company.

The property account

The property account has run very well, apart from a series of larger losses in 2008 and a mediocre year in 2011. Again Mr. Langa has worked a lot with the property account manager to weed out poorer quality business and to get larger shares on the better clients. The company has always specialised in the smaller shops and offices, but there are some accumulations in shopping centres and office blocks.

Reinsurers have also made profits and many reinsurers visit Mr. Langa in the hope of getting a share on the property treaty. Mr. Langa is thinking of perhaps using this attractive treaty to help with any difficulty in placing the motor treaty, but first he wishes to review this treaty also on a stand-alone basis. The basic results are as below.

MOTOR ESTIMATED ULTIMATE RESULT

YEAR	PREMIUM x000	INCURRED LOSSES x000	LOSSES RATIO
2008	3 189	2 249	71%
2009	3 250	1 635	50%
2010	2 889	1 452	50%
2011	2 846	1 744	61%
2012	2 928	1 574	54%
2013	2 845	1 454	51%
2014	3 026	1 282	42%
2015	2 968	1 366	46%

Mr. Langa reviews some commission calculations as below:

MOTOR ESTIMATED ULTIMATE RESULT

YEAR	PREMIUM x000	INCURRED LOSSES x000	LOSSES RATIO	DESIRED COMMISSION	RESULT
2008	3 189	2 249	71%	40%	-10.54%
2009	3 250	1 635	50%	40%	9.68%
2010	2 889	1 452	50%	40%	9.74%
2011	2 846	1 744	61%	40%	-1.26%
2012	2 928	1 574	54%	40%	6.25%
2013	2 845	1 454	51%	40%	8.91%
2014	3 026	1 282	42%	40%	17.65%
2015	2 968	1 366	46%	40%	13.98%

COMMISSION LEVEL DESIRABLE	40%	AVERAGE	7%	PROFIT FOR REINSURER
COMMISSION LEVEL NEEDED	30%	AVERAGE	17%	PROFIT FOR REINSURER

Yes indeed, this is an attractive treaty from a results perspective, and even with a 40% commission, it is probably sellable to reinsurers.

Mr. Langa also reviews ABC's risk profile as below:

ABCs PROPERTY RISK PROFILE

		No. OF POLICIES	AGGREGATE SUM INSURED	AVERAGE SUM INSURED	PREMIUM
\$ '000	\$ '000				
-	10 000	36 232	253 623 601	7 000	380 435
10 001	15 000	48 309	652 174 975	13 500	978 262
15 001	20 000	36 232	615 943 032	17 000	922 707
20 001	30 000	12 077	314 010 173	26 000	471 015
30 001	40 000	2 415	91 787 589	38 000	137 681
40 001	50 000	1 208	51 932 452	43 000	77 899

2 968 000

Would it perhaps be better to drop the property proportional treaty and move to an excess basis? How much would, for example, a cover 30,000 xs 20,000 cost? The bulk of the income is generated in the range 0-20,000.

Mr. Langa reviews the calculation below:

ABCs PROPERTY RISK PROFILE

\$ '000	\$ '000	No. OF POLICIES	AGGREGATE SUM INSURED	AVERAGE SUM INSURED	PREMIUM	XSL SCALE	30 000 Av % TO COVER	XS SCALE	20 000
-	10 000	36 232	253 623 601	7 000	380 435	0%	0%	0.0%	0.00
10 001	15 000	48 309	652 174 975	13 500	978 262	0%	0%	0.0%	0.00
15 001	20 000	36 232	615 943 032	17 000	922 707	0%	0%	0.0%	0.00
20 001	30 000	12 077	314 010 173	26 000	471 015	0%	77%	10.6%	49 927.62
30 001	40 000	2 415	91 787 589	38 000	137 681	0%	53%	16.6%	22 855.11
40 001	50 000	1 208	51 932 452	43 000	77 899	0%	47%	18.2%	

**TOTAL PREMIUM FOR COVER
LOADING** 86 960.29
0.00

**TOTAL PREMIUM
PERCENTAGE OF ORIGINAL** 86 960.29
2.93%

Based on one of the market exposure rating scales (for more details on exposure rating refer to the Intermediate Reinsurance Course), a per risk cover with adequate reinstatements could cost some 3% of gross net income. This is a rough calculation based on gross net income, rather than pure risk premium, Mr. Langa considers that based on a 30% commission, there is already a fair loading on the pure risk premium.

While there has never been a catastrophe loss to ABC, if ABC were to buy a catastrophe cover based on their worst case scenario analysis for 100%, they would need a limit of 5,000,000 including the retention. Mr. Langa considers that the current property portfolio could withstand a shock loss of 10%, or 300,000.

Further review :

Mr. Langa wants, now that the portfolio has been cleaned up, to expand the company. The current premium volume is low, and the property account is very small. Mr. Langa would like to bid for larger commercial/industrial accounts and double the property business over the next few years.

With this in mind, and the current limited capital which anyway requires reducing gross net premium by way of reinsurance, it does not make sense to move away from a structure that is heavily biased towards proportional reinsurance.

A good strategy seems to be to continue to cede the property by way of quota share, and use this desirable cession, where possible, to leverage the placement of the motor quota share at optimum commission terms. If the property continues to run well, then Mr. Langa can build on this good relationship with reinsurers to set up some surplus cessions to expand into larger commercial/industrial accounts. In the meantime ABC can start to develop this property strategy using facultative reinsurance to test out reinsurers' flexibility, response times and terms.

Mr. Langa would like to cede 5,000,000 of the 7,000,000 of motor premium by way of a proportional quota share treaty and 1,000,000 of the 3,000,000 of property premium. This may be optimistic, but a good base to begin negotiations with reinsurers. By retaining only 4,000,000 overall, with a good balance between property and motor, Mr. Langa can work on developing the property account toward the current premium limit of 5,000,000. If all goes to plan and results are good, then there will be options of further raising capital and/or expanding the property reinsurance programme.

The final choice of the per risk and catastrophe covers will depend on the amount of property business it will be necessary to cede to ensure the motor is placed to an optimum level. But this will simply mean looking for excess covers based on the considerations above, reduced by the property quota share cessions.

As for the motor excess covers, these will also be dependant on the amount that can be ceded to the motor quota share.

Finally Mr. Langa needs to consider a scenario where both motor and property insurances are involved in the same catastrophic scenario and whether the reinsurance programme, when completed as above, will provide adequate cover, but this can only be done once the other covers are in place. This will be also a question of affordability once all other reinsurances have definite pricing.



7. IMPORTANT CLAUSES

Learning objective: To be familiar with important reinsurance clauses that can limit or expand cover.

Certain clauses in a reinsurance contract can have a material impact on the cover being provided, and it is important to understand the potential impact on the cover the cedant may think they have.

7.1 Reinstatement

Most excess of loss treaties either on a per risk basis or a per event basis have limited reinstatements. That is to say if, for example, the cover is 100,000 excess of 50,000, once there have been losses exceeding the deductible (50,000) whether partial or for the full limit (100,000) when the cover would be exhausted, the cover then requires reinstatement. Thus on a per risk or event basis, the cedant needs to consider how many times the excess cover might be needed.

The reinsurer will charge additional premium if the cedant wishes to buy reinstatement options. On a low level motor excess of loss where both the cedant and the reinsurer expect a lot of claims the pricing may already include a number of reinstatements, but for a high level catastrophe cover where the expectation is that it will only be hit every 100 years or more, only one reinstatement may be available and it will likely be at 100% additional premium.

Where the rate is 1% of net premium income, every reinstatement adds 1% to the loss ratio, where it is 10% it adds 10%, which can be a significant amount when a major loss has already occurred. When a cedant is reviewing the “benefit” it gets from its reinsurance programme, it always needs to take account of the cost of reinstatement premiums and deduct these from the payments it expects from the reinsurers. Some cedants consider buying “reinstatement covers”, which is a reinsurance purchased to pay for the reinstatement premiums due under certain defined excess of loss covers in the event they become exhausted through claims. These covers can be expensive, but if a cedant has run out of cover and needs to buy more cover during an annual period, generally pricing will be high as the cedant has very little room for negotiation. An example of a reinstatement clause is as follows:

Reinstatement Clause :

In the event of the whole or any portion of the indemnity provided under this Agreement being exhausted, the amount so exhausted shall be automatically reinstated from the time of the loss occurrence to the expiry of this Agreement subject to payment of an additional premium calculated on the basis stated under REINSTATEMENTS in the Contractual Details. Such additional premium to be paid at the time the loss settlement is made.

Nevertheless, the Reinsurer's liability shall not exceed the limit of this Agreement as specified in the Contractual Details of this Agreement with respect to any one loss occurrence nor more than the amount as specified in the Contractual Details of this Agreement under REINSTATEMENTS (Limit in all) with respect to all losses arising during the term of the Agreement.

If a loss settlement that gives rise to reinstatement is made prior to the adjustment of the Minimum and Deposit Premium the reinstatement premium shall be provisionally calculated on such Minimum and Deposit Premium, and adjusted when the final adjusted premium figures are available.

Losses shall be considered in date order of their occurrence.

REINSTATEMENTS in the Contractual Details :

One full reinstatement at 100% Additional Premium as to time, pro rata to amount of indemnity only on the final adjusted premium hereon.

(Reinstatement Premium shall be calculated at pro rata of the annual premium as respects the fraction of indemnity exhausted regardless of the unexpired term of this Agreement).

Limit in all: \$ 2,500,000.

7.2 Index clause

The purpose of an index clause is to share the “cost” of inflation between the cedant and the reinsurer. Without such a clause the “cost” of inflation usually falls on the reinsurer. For example, the cedant has an excess of loss cover for 100,000 excess of 50,000. There is a claim for 75,000. This claim is disputed for a number of years, and is only finally settled 6 years later. Due only to high inflation the claim then reaches a value of 100,000. In such a case the cedant is still only liable for 50,000, but whereas at the time of the loss the reinsurer was only liable for 25,000 (75,000-50,000), it is now liable for 50,000 (100,000-50,000), so it has suffered the full “cost” of the high inflation.

Through the use of an index clause, both the priority and the cover are adjusted to take account of inflation, thus in the above example, the priority might move up to say 65,000, thus the reinsurer’s cost is reduced from 50,000 to 35,000.

Thus, especially where long tail business is concerned, the cedant needs to take account of the existence of an index clause, as this can have a material impact on the amount the reinsurer will eventually pay, and the additional amount of loss which the cedant itself will be liable for. An example of an index clause is as follows:

INDEX CLAUSE :

It is the intention of this Agreement that the Indemnity and the Deductible shall retain their relative monetary value which existed at the date specified in the Schedule and such relative monetary value shall be deemed to be based on the index (specified hereafter) applying at such date (hereinafter called the base index).

In respect of any loss settlement(s) made under this Agreement the Reinsured shall submit a list of payments comprising such loss settlement(s) showing the amount(s) paid and the date(s) of payment. Each payment (including legal costs) to one victim in respect of a bodily injury claim, excluding continuing regular payments, shall be included and the index at date of payment as defined below shall be that applying at the time that each payment for compensatory damages is made. The amount of each such payment shall be adjusted to its relative value at the date specified in the Schedule by means of the following formula:-

Amount of Payment x Base Index. = Adjusted Payment Value.

Index at date of payment.

If the index at date of payment does not exceed the base index by 10%, the amount of payment shall be used as the Adjusted Payment Value for the amount.

All actual payments and adjusted payment values shall be separately totalled and the Indemnity and the Deductible shall then be multiplied by the fraction:-

Total of Actual Payments.

Total of Adjusted Payment Values.

Definitions.

(a) Index:

(i) In respect of an award resulting in continuing regular payments, the index or indices to be applied shall be that to which such award is linked and for all other payments the index to be applied shall be that for the territory in which the claim is made as shown under the heading «Consumer Prices» in the monthly «International Financial Statistics» published by the International Monetary Fund.

If this publication does not contain a Consumer Prices index for the territory concerned, then the index to be applied shall be that for Wage Rates or Earnings, or an alternative I.M.F. index to be agreed between the parties hereto.

If this publication does not contain any indices or any mutually acceptable indices for the territory concerned, then an alternative publication shall be mutually agreed between the parties hereto.

(ii) The base index for each loss settlement shall be the latest available index appearing in the edition specified in the Schedule of the appropriate publication specified in Section (i) above.

(iii) The index at date of payment shall be the latest available index appearing in the edition of the publication for the month in which payment is made and/or the index at the date of the first continuing regular payment and subsequently as used in any adjustment thereof.

(b) The date of payment shall be deemed to be as follows:-

(i) Where no award is made by the Courts the actual date upon which settlement is agreed by the Reinsured.

(ii) The date an award is made by a Court (if no Appeal is made).

(iii) The date an award is made by the Appeal Court if the case goes to Appeal. However, in the event that the Appeal Court reduces the damages awarded by the Lower Court, other than changes in the apportionment of liability, then Section (ii) above shall apply.

(iv) The date from which continuing regular payments commence or in the event that such payments are adjusted the date from which such adjustment takes effect.

7.3 Currency fluctuation

Currency fluctuation can have several effects on a reinsurance programme.

For example, if a treaty has cash deposits, and the reinsurer is in a country with a strong currency, and the cedant is in a country with a weak currency, the reinsurer may require 10,000 of its currency to fund a cash deposit of 50,000 of the cedant's currency. At the end of the period, the rate of exchange is no longer 1:5, but 1:10. In this case while the reinsurer is credited in the cedant's currency with 50,000, it only gets back 5,000 in the reinsurer's currency, it has thus lost 5,000 due to the weakening of the cedant's currency. This can result in the technical results of a treaty being positive, yet the financial results for the reinsurer are a loss!

Another impact can be where the cedant has claims payable in a foreign currency. If say the cedant has a cover for 100,000 excess of 50,000, and there is a loss in a foreign currency of 120,000. If the rate of exchange at the time the treaty was concluded was 1:2, then the loss would be 60,000 in the currency of the cedant, and the reinsurer would have to pay 10,000 (60,000-50,000). If however, since the time the treaty was concluded, the rate of exchange has weakened to 1:3, now the loss is only 40,000, and the cedant must pay the full loss itself.

This issue can, of course, depending on the currency fluctuation, work to the benefit or the loss of the cedant, and similarly for the reinsurer. The purpose of a currency fluctuation clause is to adjust both the priority and the limit of the treaty such that the claim is paid by both parties, the cedant and the reinsurer, as if this fluctuation had not happened. An example of a currency conversion clause is as follows:

CURRENCY CONVERSION CLAUSE

- *Currency*

The Contract and settlement currencies are specified in the Contractual Details.

- *Rates of Exchange*

For the purpose of this Agreement currencies other than the currency in which this Agreement is written shall be converted into such currency at the rate of exchange used in the Reinsured's books. Where there is a specific remittance for a loss settlement, the conversion will be at the rate of exchange ruling on the date upon which settlement is effected.

7.4 Hours clause

As noted at the beginning of this course, the cedant's policyholders could suffer an earthquake that at the first shock does damage. Then three hours later there is a serious aftershock which does further damage, and two hours later there is another serious aftershock which does even further damage. Eight hours later there is another serious aftershock that does even more damage, and finally two days later there is a final aftershock that does further damage. Is this one event or is this five events? As it was impossible to have loss adjusters on the scene so quickly, is it possible to determine what damage was done by what event? A similar issue can apply with a storm or repetitive floods.

An "hours clause" in a contract gives the cedant the opportunity to pick an agreed time span – usually somewhere between 48 hours and 120 hours, and choose a start time at the beginning or during the event which optimises the cover and allows it to recover the maximum amount from reinsurers. Once again it is important that the cedant has properly reviewed what events could occur, and how long they might last, so it is in a good position to negotiate with reinsurers the cover it needs. An example of an hours clause is as follows:

HOURS CLAUSE

The words «loss occurrence» shall mean all individual losses arising out of and occasioned by one event. However, the duration and extent of any «loss occurrence» so defined shall be limited to:

72 consecutive hours as regards hurricane, typhoon, windstorm, rainstorm, hailstorm and/or tornado

72 consecutive hours as regards earthquake, seaquake, tidal wave and/or volcanic eruption

72 consecutive hours and within the limits of one City, Town or Village as regards riots, strikes, civil commotions and malicious damage

168 consecutive hours for any other Insured Peril

and no individual loss from whatever Insured Peril which occurs outside these periods or areas, shall be included in that «loss occurrence».

The Reinsured may choose the date and time when any such period of consecutive hours commences and if any event is of greater duration than the above periods, and subject to the application of any reinstatement provisions contained herein, the Reinsured may divide that event into two or more «loss occurrences», provided no two periods overlap and provided no period commences earlier than the date and time of the happening of the first recorded individual loss to the Reinsured in that event.

7.5 Claims co-operation and ex gratia claims

A reinsurance cover is only useful if recoveries can be made when valid losses occur. It is thus vital that any claims co-operation demands made by reinsurers are followed precisely. The cedant's very existence may depend upon it! Equally if the cedant feels there may be occasions, based on past experience, where ex gratia claims may be necessary, then it should discuss this aspect with prospective reinsurers when negotiating the cover. If the cedant will benefit here from flexible reinsurers, then it should choose this type of reinsurer to be on its programme. An example of a claims cooperation clause:

CLAIMS COOPERATION

The Reinsured shall report as soon as possible all claims for losses estimated to amount to 75% or more of the underlying loss for this Agreement.

The Reinsured shall keep the Reinsurers informed of all significant developments relating to such claims. The Reinsurers shall if they wish be entitled to participate consultatively in the settlement of claims and in the estimation of loss reserves.

The Reinsured shall furnish the Reinsurers with such documents and papers as they may require in connection with any loss in which the Reinsurers may be interested hereunder.

The Reinsured shall furnish to the Reinsurers at the end of each year a list of any unsettled claims of which they are aware, and which may cause a claim under the Agreement together with an estimate of liability.

An example of a loss settlements clause where the reinsured shall be sole judge regarding a loss INCLUDING ex gratia claims:

The Reinsured at their sole discretion and without any right on the part of the Reinsurers to interfere, shall adjust, settle and/or compromise all claims or losses, and every such adjustment, settlement and/or compromise including ex gratia payments shall be binding on the Reinsurers. The Reinsured shall likewise at their sole discretion commence, continue, defend, compromise, settle or withdraw from actions, suits or prosecutions, and generally do all such matters and things relating to any claim or loss as is their judgement may be beneficial or expedient, and all payments made and costs and expenses incurred in connection therewith other than office expenses and salaries of officials of the Reinsured shall be shared proportionately by the Reinsurers. The Reinsurers shall also share in proportion to their interest, in all amounts which shall be recovered by the Reinsured in respect of any loss.



8. CHOICE OF REINSURER

Learning objective: To identify the right reinsurers

Every time a ceding company issues a policy, it issues a promise to pay should certain defined events occur and the policyholder makes a loss. While the term of the cover is defined, it may be that a loss is only discovered, or a claim made, some years in the future. Sometimes claims settlement can also take years rather than months. It is thus of the utmost importance that when the time comes to pay a loss, that the reinsurer is still standing behind its promise to pay and the ceding company can rely on timely payment.

Important attributes that a reinsurer should possess include:

8.1 Financial strength – Solid balance sheet / Acceptable rating

Clearly financial strength is a vital requirement when choosing a reinsurer. All acceptable reinsurers today are rated by one of the major rating organisations such as Standard & Poors or Fitch. While a rating is important, there is no substitute for a cedant or its intermediary doing some basic due diligence on the proposed reinsurer as well. There is no substitution for own due diligence. Had buyers done proper due diligence on the sub-prime paper being offered to them it might have saved some major financial collapses in 2008.

Sometimes, when being requested to front risks, a ceding company may receive such a request from an unrated captive. A cedant should seriously consider the potential cost of being willing to accept unrated credit risk, especially where low premium and wide terms and conditions may easily result in losses. If the captive should fail, it in no way alters the liability of the cedant towards its policyholder, and in many jurisdictions hold-harmless and other clauses may not be accepted by the courts.

8.2 Good claims payment record (not only able, but also willing to pay)

It is important to remember that “ability” to pay (strong financials and good rating) does not necessarily guarantee a “willingness” to pay, and reinsurers with reputations of trying to find excuses to pay with long delays or to try not to pay at all should be avoided. Thus it is important that a reinsurer has a good claims payment record. Here again a knowledgeable intermediary can be helpful in seeking out reinsurers with a good claims payment record.

Reinsurers with a wide experience of claims adjustment can also be helpful where a claim is complex or has occurred in a country where the cedant has little experience. Being able to call upon such experience may also be a criteria for choosing the right reinsurers.

8.3 Underwriting expertise

Underwriting expertise might be seen as a double-edged sword. A reinsurer with excellent underwriting expertise may be thorough in its analysis of the risks offered by the cedant, may ask questions and may not provide a very competitive rate. On the other hand a reinsurer who accepts risks easily and provides a very competitive price, may suffer considerable losses, and may then react by withdrawing capacity, by suddenly increasing pricing, or even going out of business, all of which can cause the cedant much greater problems at some stage rather than answering a few more questions and paying a bit more at the time of placing the business.

The cedant may also find it can usefully feed from a reinsurer with excellent underwriting skills and get good pricing tips and underwriting assistance on complex risks, where the cedant needs to remain competitive with im-

portant existing clients and desirable new prospects.

8.4 Market knowledge – domestic and international

As with underwriting expertise, so also with a broad experience of the market in which the cedant works and the international markets as well, a reinsurer can help steer the cedant in times of economic and political turmoil, or in times of severe competition, or in the introduction of new risks. It may also be helpful to identify the reasons for falls in profitability and help in any consequent restructuring of the portfolio to bring the company back to profitability.

8.5 Corporate objectives / Underwriting strategy

Depending on the structure of the cedant's reinsurance programme, in general the reinsurer has promised to stand behind the cedant when a valid loss requires payment. This may be some years in the future. Thus it is important to appreciate the reinsurer's corporate objectives and underwriting strategy. If a reinsurer is considering entering the cedant's market as a competitor, or is intending to cut its support of the market, or wants to considerably expand its world-wide market share, or is intending to buy up another large reinsurer, all these are examples which should raise a red flag for the cedant, and should be reasons for further examination of the reinsurer and finally a reason to avoid it.

Again a well-informed intermediary can help the cedant to pick the best reinsurers for the different parts of its programme, so there is an optimum fit with the business, corporate objectives and future plans of the cedant.



9. CHOICE OF REINSURER INTERMEDIARY

Learning objective: To choose the right reinsurance intermediary

A good reinsurance intermediary can be summed up as follows:

Your reinsurance intermediary should be your best friend, preserving and enhancing your reputation. It is one of your able counsellors and one of your best business doctors. It has your best interests at heart, and has familiarity with and access to the worldwide markets and the security they offer. It can access capacities, technical know-how, documentation and training facilities which can be tailored to almost any need. It can also support you with difficult claim issues.

These qualities are reviewed in more detail below:

9.1 Be familiar with and have access to the world-wide markets

An important role of a good reinsurance intermediary is to bring people together – reinsurance buyer and sellers. This can only be accomplished where the intermediary not only knows the important details about the cedant, and the market in which the cedant operates, but also which reinsurers will be the best fit.

The market is constantly changing, and with it reinsurers' plans and strategies. International events, whether political or economic, large natural or man-made catastrophes can occur at any time changing the make-up of the market.

A good intermediary has effective information gathering skills and the experience to know which information is reliable and which is simply intended to mislead.

9.2 Be able to offer technical know-how, documentation, and support with difficult claim issues

Equally the ceding company is faced with a constantly changing market, with unexpected challenges and the need to develop its business in a dynamic environment. Existing plans may need adjustments or even complete revision. Once again a good intermediary can provide valuable input, helping the cedant to resolve complex issues, and where necessary, to change or further develop its reinsurance programme.

An intermediary who has the cedant's best interest at heart can be invaluable at such times, equally when a large claim occurs, to be an effective emissary with any reluctant reinsurers.

9.3 Be able to facilitate training programmes

Helping a cedant with its strategies and plans can be greatly enhanced by also ensuring that the cedant has access to good, cost-effective training programmes. There is no substitute for well-trained and capable staff, who can better underwrite, better negotiate and better administrate the business. Where new lines of business may be introduced, or legal changes have a major effect on current ways of doing business, it is very important to ensure an effective transition well supported by properly trained employees.

9.4 Appreciate the income your business will generate, and thus care about your business

One of the vital ingredients of a good intermediary is that it is committed to its clients. Many cedants will not be the intermediary's largest clients, some cedants may generate relatively low income for the intermediary concerned. A cedant really needs to make sure that the intermediary it works with is committed. An intermediary may have all the qualities listed in a,b and c above but all that is useless if the intermediary does not employ those skills effectively for the cedant.

This will be a matter of judgement – can I trust that once I have appointed this intermediary, it will keep its promises and be there for me when needed?

9.5 Be familiar with your local market, and any special needs and requirements it may have

Another vital ingredient for a reinsurance intermediary is to be familiar with the local market and its needs. Especially where reinsurers will not be local and may operate under different laws and may have another culture, it is so important that there will not be gaps in understanding, in law and hence in cover.

If the intermediary is new to the country, comes from another culture, even is working in a foreign language, then how much information is really being transmitted between the parties and how reliable will the cover and documentation be?

9.6 Be an able and friendly counsellor

The right reinsurance intermediary will also keep its client's confidences. Unlike a reinsurer, who will always have some partiality – a necessary adjunct to taking on the cedant's risks – the cedant should be able to trust the intermediary's discretion and thus involve it early on in any problems or questions that require tact, diplomacy and also a time-effective solution.

Perhaps the above is a lot to ask from one intermediary organisation, especially where the remuneration for the intermediary may not be very high. Perhaps the highest attributes on the list should be commitment to the cedant, and the ability to effectively translate the needs of the cedant into the language and culture of the reinsurer to ensure there are no gaps in cover.



10. CONCLUSION

Designing a reinsurance programme is a challenging and complex subject and, at the end of the day, there is no perfect answer or easy formula to achieve the desired result.

The emphasis in this course has been on a simple, pragmatic approach. Mathematical approaches and complex modelling of reinsurance structures doubtless have their value, but once all these tasks have been performed, the person in charge has to take a decision. Whether one chooses a five hundred year return period or a two hundred and fifty year return period or a one hundred year return period, the year in question could occur this year or next year ... and then what is the result?

Already it is difficult to imagine a one hundred year return period. This is a good human life span, and in today's changing world it is difficult to predict five years ahead. One needs to appreciate and evaluate the results that all the mathematics and the models produce. As always there will be a number of results to choose from, and also assumptions which make more or less sense.

If the simple and pragmatic approach is at considerable variance from the mathematical and modelled approach, the differences need to be evaluated, as far as possible one needs to understand why there is a difference, and to find or receive a satisfactory explanation.

Mathematical formulas and complex models may have a robust and proven background, but mistakes can be and are easily made in their application, and the result may or may not be anywhere near the reality of the market in which the cedant must compete, or the market in which it must negotiate reinsurance terms.

There is thus no substitute for the knowledge and experience the person in charge needs to take the decisions which may well mean the ultimate success or failure of the company.

Equally the market may dictate pricing or terms and conditions that deviate considerably from an optimum result, while negotiation techniques can have a major influence on the final terms and pricing.

Once again knowledge of reinsurance forms and types, documentation, accounting, statistics, reserving, and pricing are all essential parts of the negotiation advantage.

Once again, without a solid technical understanding it is difficult to negotiate the finer points that can mean the difference between an average reinsurance protection and an optimum reinsurance protection.



11. TEST

11.1 Multiple choice questions

1. **The ABC insurance company has 75% of its business in Kenya and 25% of its business in Uganda. Which of the following statements is correct?**

- a. ABC's business in Uganda is incidental to its business in Kenya.
- b. ABC can choose what is a risk, so it can decide whether reinsurers should also cover its business in Uganda.
- c. ABC needs to clearly state in any territorial scope that it writes business in both Kenya and Uganda.
- d. Territorial scope is not an important underwriting consideration.

2. **There is heavy rainfall and a serious flooding occurs which lasts for two weeks before the waters slowly subside. The treaty contains a 72 hours clause in respect of flooding. Which of the following statements is correct ?**

- a. Reinsurers decide when the 72 hours clause will start.
- b. The existence of an "hours clause" means the cedant must cooperate with reinsurers on all claims to which the clause is subject.
- c. As the rainfall was not continuous during any 72 hour period, the clause does not apply.
- d. The cedant can decide when the 72 hour clause shall apply at any time from the beginning of losses caused by the event.

3. **Mrs. Green worked in a factory using asbestos from 1.1.1967 to 31.12.1967. Her doctor diagnosed malignant mesothelioma on 1.5. 2002. Mrs. Green begins a suit against her employer on 1.2.2003. The reinsurance treaties of ABC have always been on a claims made basis. Which of the following statements is correct ?**

- a. Mrs. Green cannot make any claim on her employer as more than 20 years have passed from the time of employment to the time of diagnosis.
- b. Reinsurers on the 1967 treaty year are exposed.
- c. The loss period starts running from 1.5.2002 and the reinsurers on the 2002 treaty year are exposed.
- d. The reinsurers on the 2003 treaty year are exposed as that is when Mrs. Green sues her employer.

4. **Mrs. Green worked in a factory using asbestos from 1.1.1967 to 31.12.1967. Her doctor diagnosed malignant mesothelioma on 1.5. 2002. Mrs. Green begins a suit against her employer on 1.2.2003. The reinsurance treaties of ABC have always been on a losses occurring basis. Which of the following statements is correct ?**

- a. Reinsurers on the 1967, 2002 and 2003 treaty years are exposed and if liable must pay the loss each pro-rata.
- b. Reinsurers on the 2003 treaty year are exposed.
- c. Reinsurers on the 2002 treaty year are exposed.
- d. Reinsurers on the 1967 treaty year are exposed.

5. **The ABC insurance company has a profitable property account of small and medium sized commercial risks, but to maintain their margin of solvency they need to cede at least 50% of their gross net income. Which of the following statements is correct ?**

- a. ABC need to study their risk profile, and consider a per risk excess of loss cover with a deductible at a level where half of the portfolio sums insured fall above that deductible.

- b. ABC should consider a non-proportional catastrophe cover to limit their exposure to any one event.
- c. ABC should consider a proportional surplus treaty so that they can cede the larger risks.
- d. ABC should consider a proportional quota share treaty so that they can cede a share of their portfolio.

6. **ABC has a gross retention in their property account of \$2,000,000, a 75% quota share and a 2 line surplus treaty. On their net retention they have a non-proportional per risk excess of loss cover for \$400,000 excess of \$100,000. Which of the following statements is correct ?**

- a. ABC need to use facultative insurance if they wish to write a risk exceeding \$5,000,000.
- b. If ABC write a risk with a sum insured of \$400,000 and there is a claim for \$300,000 they can claim \$200,000 from their per risk excess of loss cover.
- c. ABC have a maximum net retention of \$500,000, but can only lose \$100,000 on any one risk.
- d. ABC have an automatic capacity of \$6,000,000 but can only lose a maximum of \$100,000 on any one risk.

7. **ABC are a well-capitalised company but have a property account that has been making losses for the past three years. Reinsurers want to reduce commission from 27.5% to 25%, and ABC needs 26% to cover its costs. Which of the following statements is correct ?**

- a. ABC should be happy that reinsurers are still willing to continue and accept the 25% commission.
- b. ABC needs to understand why the loss ratio is so poor, and what corrective actions could work.
- c. ABC should buy more non-proportional capacity and reduce proportional capacity.
- d. ABC should combine an action to improve its loss ratio with a review of different commission possibilities – fixed versus sliding scale, a combination with a profit commission.

8. **ABC have a large motor portfolio and have just had their largest claim ever for \$3,000,000. They had a 50% quota share treaty and non-proportional protections on their net retention for \$900,000 excess of \$100,000. Which of the following statements is correct ?**

- a. ABC need to understand why such a large claim occurred, and whether it could happen again.
- b. ABC could increase the percentage of business ceded under the quota share to reduce their net retention, but then they will lose net income.
- c. ABC could increase the non-proportional cover protecting their net retention.
- d. ABC could find an optimum costing in a combination of ceding more under the quota share and increasing the non-proportional cover on their net retention.

9. **ABC have automatic reinsurance capacity up to \$5,000,000 and a large multi-national industrial company asks ABC to front a risk for \$4,000,000 and cede it 100% to their unrated captive. Which of the following statements is correct ?**

- a. ABC have no worries as if the captive is unable to pay, they can simply cede the risk under their automatic facilities.
- b. If ABC accept the fronting, they are accepting a large credit risk and they need to price this risk or receive suitable collateral.
- c. ABC can reduce the credit risk with clauses in the insurance contract that only oblige them to pay once the reinsurer has paid, but they need legal advice to ensure such clauses are enforceable in their country.
- d. ABC can advise the reinsurers on their reinsurance programme that they wish to include fronted risks.

10. ABC are negotiating their non-proportional property per risk covers and would like at least 2 reinstatements. Reinsurer A offers 1 at 100% of premium 100% as to time and pro-rata as to amount, and 1 at 100% of premium 100%, pro-rata as to time and amount, and reinsurer B offers 1 at 100% of premium 100% pro-rata as to time and amount and 1 at 100% of premium 100% as to time and pro-rata as to amount. Which of the following statements is correct ?

- a. ABC should accept the offer of Reinsurer A, all other elements being equal between the two offers.
- b. ABC should accept the offer of Reinsurer B, all other elements being equal between the two offers.
- c. ABC should try to improve on the offer of Reinsurer A.
- d. ABC should try to improve on the offer of Reinsurer B.

9.2 Case study

The ABC insurance company has a property account protected by a 50% quota share treaty, a five line surplus treaty, a per risk non-proportional protection on its net retention in 3 layers of \$40,000 excess of \$10,000, \$50,000 excess of \$50,000 and \$400,000 excess of \$100,000 and a catastrophe cover in two layers of \$30,000 excess of \$20,000, and \$250,000 excess of \$50,000.

The per risk excess of loss covers all have 2 reinstatements at 100% of premium 100% as to time and pro-rata as to amount, and the catastrophe covers all have 1 reinstatement at 100% of premium 100% as to time and amount.

Its gross retention is \$1,000,000 MPL, subject to a minimum MPL of 50%.

The net property premium income of ABC is estimated for the year at \$1,250,000.

The rates/minimum and deposit premiums for the per risk covers are:

PER RISK

EPI	RATE	AMOUNT 100%	M&D 80%
1 250 000.00	1.15%	14 375.00	11 500.00
1 250 000.00	1.00%	12 500.00	10 000.00
1 250 000.00	3.00%	37 500.00	30 000.00

The rates/minimum and deposit premiums for the catastrophe covers are:

CATASTROPHE

EPI	RATE	AMOUNT 100%	M&D 80%
1 250 000.00	0.20%	2 500.00	2 000.00
1 250 000.00	1.75%	21 875.00	17 500.00

ABC has several major property losses during the year:

Loss 1 – 31 January 2015 - \$5,000,000. Policy sum insured \$5,000,000.

Loss 2 – 15 May 2015 - \$4,000,000. Policy sum insured \$4,500,000.

Loss 3 – 15 December 2015 - \$8,000,000 (MPL estimate was 50%, but result was 100% loss). Policy sum insured \$8,000,000, \$4,000,000 MPL.

ABC also has a catastrophe event, 12 October 2015, with five individual losses of:

(A) \$20,000 - policy sum insured \$1,000,000

(B) \$50,000 - policy sum insured \$500,000

(C) \$500,000 - policy sum insured \$1,500,000

(D) \$250,000 - policy sum insured \$2,000,000

(E) \$2,000,000 - policy sum insured \$3,000,000

On 15 February 2016 reinsurers are advised that the actual premium income for 2015 was 1,476,000.

The adjustment premiums are thus as follows:

PER RISK

FINAL PI	RATE	AMOUNT 100%	ADJUSTMENT
1 476 000.00	1.15%	16 974.00	5 474.00
1 476 000.00	1.00%	14 760.00	4 760.00
1 476 000.00	3.00%	44 280.00	14 280.00

CATASTROPHE

FINAL PI	RATE	AMOUNT 100%	ADJUSTMENT
1 476 000.00	0.20%	2 952.00	952.00
1 476 000.00	1.75%	25 830.00	8 330.00

What is the net cost of these claims for ABC subsequent to knowing its actual premium income for 2015? (The net cost excludes the adjusted initial premiums for the non-proportional covers.)

APPENDIX A

Test answers

- 1) b
- 2) c
- 3) d
- 4) d
- 5) b
- 6) d
- 7) c
- 8) b
- 9) a
- 10) d

Case study answers

Step 1 – Calculation of reinsurance cessions and thus percentage distribution of the losses:

Loss 1

	RISK DISTRIBUTION	PERCENTAGE DISTRIBUTION
SUM INSURED	5 000 000.00	
RETAINED NET	500 000.00	10%
QUOTA SHARE REINSURERS	500 000.00	10%
SURPLUS REINSURERS	4 000 000.00	80%
		100.00%

	Loss DISTRIBUTION
Loss 100%	5 000 000.00
RETAINED NET	500 000.00
QUOTA SHARE REINSURERS	500 000.00
SURPLUS REINSURERS	4 000 000.00
	5 000 000.00

Loss 2

	RISK DISTRIBUTION	PERCENTAGE DISTRIBUTION
SUM INSURED	4 500 000.00	
RETAINED NET	500 000.00	11.11%
QUOTA SHARE REINSURERS	500 000.00	11.11%
SURPLUS REINSURERS	3 500 000.00	77.78%
		100.00%

	Loss DISTRIBUTION
Loss 100%	4 000 000.00
RETAINED NET	444 444.44
QUOTA SHARE REINSURERS	444 444.44
SURPLUS REINSURERS	3 111 111.11
	4 000 000.00

The losses are taken in chronological order, and the losses to ABC are those retained net.

CATASTROPHE

Loss A

SUM INSURED
RETAINED NET
QUOTA SHARE REINSURERS
SURPLUS REINSURERS

Risk Distribution	PERCENTAGE DISTRIBUTION
1 000 000.00	
500 000.00	50%
500 000.00	50%
-	0%
	100.00%

Loss 100%
RETAINED NET
QUOTA SHARE REINSURERS
SURPLUS REINSURERS

Loss Distribution
20 000.00
10 000.00
10 000.00
-
20 000.00

Loss B

SUM INSURED
RETAINED NET
QUOTA SHARE REINSURERS
SURPLUS REINSURERS

Risk Distribution	PERCENTAGE DISTRIBUTION
500 000.00	
250 000.00	50.00%
250 000.00	50.00%
-	0.00%
	100.00%

Loss 100%
RETAINED NET
QUOTA SHARE REINSURERS
SURPLUS REINSURERS

Loss Distribution
50 000.00
25 000.00
25 000.00
-
50 000.00

Loss C

SUM INSURED
RETAINED NET
QUOTA SHARE REINSURERS
SURPLUS REINSURERS

Risk Distribution	PERCENTAGE DISTRIBUTION
1 500 000.00	
500 000.00	33.33%
500 000.00	33.33%
500 000.00	33.33%
	100.00%

Loss 100%
RETAINED NET
QUOTA SHARE REINSURERS
SURPLUS REINSURERS

Loss Distribution
500 000.00
166 650.00
166 650.00
166 700.00
500 000.00

Loss D

SUM INSURED
RETAINED NET
QUOTA SHARE REINSURERS
SURPLUS REINSURERS

Risk Distribution	PERCENTAGE DISTRIBUTION
2 000 000.00	
500 000.00	25.00%
500 000.00	25.00%
1 000 000.00	50.00%
	100.00%

Loss 100%
RETAINED NET
QUOTA SHARE REINSURERS
SURPLUS REINSURERS

Loss Distribution
250 000.00
62 500.00
62 500.00
125 000.00
250 000.00

Loss E

SUM INSURED
RETAINED NET
QUOTA SHARE REINSURERS
SURPLUS REINSURERS

Risk Distribution	PERCENTAGE DISTRIBUTION
3 000 000.00	
500 000.00	16.67%
500 000.00	16.67%
2 000 000.00	66.67%
	100.00%

Loss 100%
RETAINED NET
QUOTA SHARE REINSURERS
SURPLUS REINSURERS

Loss Distribution
2 000 000.00
333 333.33
333 333.33
1 333 333.34
2 000 000.00

Loss 3

SUM INSURED
RETAINED NET
QUOTA SHARE REINSURERS
SURPLUS REINSURERS

Risk Distribution	PERCENTAGE DISTRIBUTION
4 000 000.00	
500 000.00	12.50%
500 000.00	12.50%
3 000 000.00	75.00%
	100.00%

Loss 100%
RETAINED NET
QUOTA SHARE REINSURERS
SURPLUS REINSURERS

Loss Distribution
8 000 000.00
1 000 000.00
1 000 000.00
6 000 000.00
8 000 000.00

Having calculated all the net losses to ABC, these are summarised below and the relevant non-proportional recoveries are calculated.

First the net recoveries from the per risk covers:

ABCs LOSSES

		PER RISK RECOVERY	REINSTATEMENT PREMIUM
Loss 1	500 000.00	490 000.00	-76 014.00
Loss 2	444 444.44	434 444.44	-69 864.00
LOSSES			
A	10 000.00	-	
B	25 000.00	15 000.00	
C	166 650.00	141 650.00	-6 150.00
D	62 500.00	-	
E	333 333.33	233 333.33	
Loss 3	1 000 000.00	155 572.23	
		1 470 000.00	-152 028.00
NET RECOVERY			1 317 972.00

Important notes regarding the above calculations:

- The reinstatement premium is based on the final premium income figure.
- Loss 1 exhausts all three per risk layers, which are then reinstated for the first time.
- Loss 2 exhausts the first two layers of the per risk cover for the second time, so these two layers require a full second reinstatement. The third layer is only partially exhausted, thus only needs to be partially reinstated, there is still \$55,555.56 capacity left in the first reinstatement.
 - Loss B uses \$15,000 of the \$40,000 remaining capacity under the first layer.
 - Loss C uses the remaining \$25,000 capacity under the first layer, exhausts the remaining capacity under the second layer, so there is only a reinstatement premium payable to reinstate the third layer, which then still has a capacity of \$388,905.56.
 - \$233,333.33 of the remaining capacity under the third per risk layer is used up to pay loss E, and the final capacity remaining is used up under Loss 3.
- As there have been so many losses, ABC recover three times the non-proportional per risk capacity of \$490,000 (\$490,000 x 3 = \$1,470,000) less 2 x the full premiums \$76,014 x 2 = \$152,028, thus they recover \$1,317,972.00.

The next step is to work out the recovery under the catastrophe excess of loss covers:

ABCs LOSSES

		PER RISK RECOVERY	NET LOSSES TO ABC	RECOVERY CAT COVERS	REINSTATEMENT PREMIUM
LOSSES					
A	10 000.00	-	10 000.00		
B	25 000.00	15 000.00	10 000.00		
C	166 650.00	141 650.00	25 000.00		
D	62 500.00	-	62 500.00		
E	333 333.33	233 333.33	100 000.00		
TOTAL NET LOSS			207 500.00	187 500.00	28 782.00
				NET RECOVERY	158 718.00

It should be noted that the catastrophe recoveries are calculated after the per risk recoveries and less the reinstatement premium which in this case is 100% of the original catastrophe premiums with no pro-rata applied.

The final step is to subtract the net non-proportional recoveries from the net losses suffered by ABC after subtracting the recoveries from the proportional cession, to ascertain the net costs of these claims for ABC as follows:

ABCs LOSSES

		NET AFTER PROPORTIONAL TREATIES	REINSTATEMENT PREMIUM		
Loss 1	500 000.00				
Loss 2	444 444.44				
LOSSES					
A	10 000.00				
B	25 000.00				
C	166 650.00				
D	62 500.00				
E	333 333.33				
Loss 3	1 000 000.00		RECOVERY PER RISK COVERS	RECOVERY CATASTROPHE COVERS	NET COST FOR ABC
TOTAL	2 541 927.77		- 1 317 972.00	- 158 718.00	1 065 237.77