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Chapter Name: Mitigating Risk - I

Today's Agenda

1. Response to Risk
2. Reinsurance- Benefits and Costs
3. Introduction to Reinsurance Products
4. Proportional Reinsurance
5. Non-Proportional (Excess of Loss) Reinsurance
6. Alternative risk transfer

1 Response to Risk

➤ Choice of Method of Risk Control

When faced with a risk each stakeholder can choose whether to:

- avoid the risk altogether
- reduce the risk, ie by either reducing the probability of occurrence or the consequences or both
- reject the need for financial coverage of that risk because it is either trivial or largely diversified
- retain all the risk
- transfer all the risk – for example by paying a premium to another party to transfer all the risk to that party
- transfer part of the risk – for example by retaining some of the risk and paying a premium to transfer the balance of risk to another party.

1 Response to Risk

The stakeholder can also take action to minimize the risk. For some risks, a range of options may be available to do this. Each option for mitigating a risk can be evaluated by assessing:

- the likely effect on frequency, consequence and expected value
- any feasibility and cost of implementing the option
- any 'secondary risks' resulting from the option; at times actions taken to minimize one risk may result in being exposed to another risk. Insurance products may minimize the risk, but introduce the slight risk of the insurer being insolvent.
- further mitigating actions to respond to secondary risks for instance taking multiple insurance products from different providers.
- the overall impact of each option on the distribution of net present values (NPVs).

1 Response to Risk

The extent to which a stakeholder will choose to pass on all or some of the risk will depend on several factors:

- How likely the stakeholder believes the risk event is to happen
- His risk appetite
- the resources that the stakeholder has to finance the cost of the risk event should it happen
- the amount required by another party to take on the risk.
- The willingness of other parties to accept the risk



Suggest ways in which risk can be avoided in the case of a financial contract.

2 Reinsurance – Benefits and Costs

➤ Benefits of Reinsurance

Reinsurance is a way of reducing, or removing, some of the risks. Its benefits are:

- It reduces the volatility in claim frequency and claim amount, thereby resulting in smoother profits, reduced capital requirements for backing the claims and a higher possibility of writing greater and diversified business
- A reduction in large losses arising from:
 - A single claim on a single risk
 - A single event
 - Cumulative events
 - Geographical and portfolio concentrations of risk
- As a result the insurer now faces a reduced risk of insolvency and an increased capacity of writing larger risks
- Access to the reinsurer's expertise

2 Reinsurance – Benefits and Costs

If an insurer takes out proportional reinsurance with retained proportion α and if S is the total claim amount payable to policyholders, then:

- the total claim amounts paid by the insurer and reinsurer respective are $SI = \alpha S$ and $SR = (1 - \alpha) S$
- the expected total claim amount paid by the insurer is $E[SI] = \alpha E[S]$
- the variance of the total claim amount paid by the insurer is $\text{var}[SI] = \alpha^2 \text{var}[S]$.

Since $0 < \alpha < 1$, we can see that a key benefit of reinsurance is a reduction in claims volatility.

A factor to note in assessing the relative costs of retaining the risk or buying reinsurance is that the reinsurer may be able to offer very competitive terms for administration, actuarial services and other insurance advice if a reinsurance contract is purchased. There is often a financial advantage to many small providers in obtaining reinsurance.

Large players in the insurance market, would also want reinsurance benefits and assistance when venturing out in a new product line. For example a provider who has only sold life insurance policies now wants to provide critical illness products.

2 Reinsurance – Benefits and Costs

The technical assistance provided by reinsurers is also a form of risk management because:

- Reduces business risk as a result of pricing being based on inappropriate assumptions
- Reduces operational risk by transferring certain activities to the reinsurer

➤ Cost of Reinsurance

The reinsurer will wish to make a profit from the risks it takes on. Effectively part of the profit from the business is passed to the reinsurer. A decision must be made which balances risks against the costs of mitigating them.

The cost of reinsurance is primarily the reinsurance premiums paid. It also includes the expenses incurred in putting the reinsurance arrangements in place and their administration.

2 Reinsurance – Benefits and Costs

➤ Cost vs Benefit

In assessing risks and rewards, the actuary can place a realistic estimate on the value of the benefits that would be paid by the reinsurance provider. This is likely to be lower than the cost of the reinsurance, as the reinsurance premium will include loadings for profits and contingencies.

Values will also need to be placed on the range of likely benefit costs so that an assessment of the risk can be made in comparison to the cost of the reinsurance.

A realistic estimate of the net cost of reinsurance is calculated along with a range over which this net cost may vary depending on the experience. This helps the insurance company in understanding the effect of reinsurance on its risk managements decision making process.

In addition to the relative costs and the variability of those costs, the liquidity risk of retaining the risk or buying reinsurance also needs to be considered in making a decision.

For example, the purchase of annuities by a pension scheme may in itself create a liquidity risk for the pension scheme.

2 Reinsurance – Benefits and Costs

The purchase of cover for death-in-service lump sums will, however, remove a potentially significant liquidity risk. This may be particularly important for a pension scheme that is immature or small, as the investment income may be low relative to the death benefits.

➤ The Effectiveness of Reinsurance

There are a variety of ways in which the liabilities arising under a contract can be reinsured. Some types of reinsurance completely remove a risk from the provider. Many others leave the liability with the provider but provide a payment to the provider that is aimed at covering that liability. However, even if a liability is fully matched by a reinsurance arrangement, the provider still bears the counterparty risk that the reinsurer is unable to fulfil its obligations.

3 Introduction to Reinsurance Products

➤ Basic Product Types

There are many variations of the basic types of reinsurance, and contracts are often tailored to meet the particular needs of the ceding company and reinsurer concerned. However, all reinsurance contracts are based on the same underlying principles.

An insurer may enter into a reinsurance arrangement in the form of a proportional or non-proportional reinsurance.

➤ Reinsurance Terminology

- Cede – 'carry forward to' or transfer' some risk to
- Treaty – provides cover to a group of policies; which the reinsurer is obliged to provide, subject to certain terms and conditions
- Direct writer – the one who directly enters into a contract with the policyholders, the primary insurer

3 Introduction to Reinsurance Products

➤ Reinsurance Contract Variations

Reinsurance may be arranged on a case-by-case basis ('facultative') or a defined series of risks may be covered ('treaty').

Facultative reinsurance may be for large and peculiar insurance policies, which neither the reinsurer is obliged to accept, nor the insurer obliged to cede.

4 Proportional Reinsurance



Under proportional reinsurance, the reinsurer covers an agreed proportion of each risk. This proportion may:

- be constant for all risks covered (called quota share reinsurance), or
- vary by risk covered (called surplus reinsurance).

Both forms have to be administered automatically, and therefore require a treaty.

➤ Quota Share Reinsurance

Under quota share reinsurance a fixed percentage of each and every risk is reinsured. The treaty will specify this fixed proportion to be ceded to the reinsurer, R% say. This is often referred to as 'an R% quota share treaty'

4 Proportional Reinsurance

❑ Uses of Quota Share Reinsurance

Quota share is widely used by ceding providers to:

- spread risk
- write larger portfolios of risk
- encourage reciprocal business.

Under reciprocal quota share reinsurance, one reinsurer may provide cover to an insurer, in exchange of the insurer providing reinsurance services to cover a part of the reinsurer's business. This enables both the companies to achieve a wider spread of risk and so greater diversification.

4 Proportional Reinsurance

➤ Surplus Reinsurance

Surplus reinsurance helps to do away with the issue of lack of flexibility associated with quota share, since it gives the insurer the freedom in choosing the amount of risk to retain, thus allowing him to fine-tune his experience, and choose what best suits him. For instance the insurer would want to retain a small proportion of the bigger and more volatile risks and a large proportion of the smaller, less volatile risks.

Surplus reinsurance is proportional reinsurance and is written under treaty. The terms of the treaty will give the direct writer the flexibility to choose how much risk to retain, but often within limits.



A surplus reinsurance treaty specifies a retention level and a maximum level of cover available from the reinsurer.

The proportion of risk ceded is then used in the same way as for quota share.

Here instead of specifying the percentages of each risk to retain, the direct writer chooses a retention limit for the risks.

For high volume business such as life assurance or personal lines general insurance, the maximum cover and the retention level are specified in the treaty.

4 Proportional Reinsurance

For commercial covers, such as commercial property and business interruption, the ceding provider can select, for each individual risk, the retention and the amount to be ceded.

Where the insurer takes the call with respect to the retention and amount ceded, the reinsurer may want for a minimum retention to apply to the provider, to prevent the provider from having too little interest in the risk.

☐ Choosing the Retention Limit

For every risk covered by the surplus treaty (the reinsurer), the direct writer (the insurer) will estimate a maximum loss that could occur, i.e. the maximum claim amount that will needed to be paid. For life insurance where the claim amount is fixed in advance, no estimation is required. However, in the case of general insurance, the claim size is not known in advance and an estimate needs to be made.

4 Proportional Reinsurance



Example

Consider three properties with quota share treaty. Here the insurer has determined the estimated maximum loss (EML) on each property as follows:

- Property 1 – a large, brand new office block – EML of \$10,000,000
- Property 2 – a small, modern shop – EML of \$400,000
- Property 3 – a medium sized, old chemical plant – EML of \$1,000,000

1. Choose retention limit

The insurer chooses the retention limit for each property. He may choose a smaller proportion for larger and more volatile risks.

Chosen retention limits

Property 1 – retention limit of \$2,000,000 for the brand new office block

Property 2 – retention limit of \$300,000 for the small modern shop

Property 3 – retention limit of \$300,000 for the old chemical plant

4 Proportional Reinsurance



2. Determining percentages retained

We use the retention limit and the estimated maximum loss, to calculate the percentage retained by the insurer for each property.

$$\text{Percentage Retained} = \frac{\text{Retention Limit}}{\text{Estimated Maximum Loss}}$$

Percentage of each risk retained by the insurer:

- Property 1 – 20%
- Property 2 – 75%
- Property 3 – 30%

4 Proportional Reinsurance



3. Split claims between reinsurer and insurer

After determining the percentages, each claim that occurs on a particular property is divided between the insurer and the reinsurer in their proportions respectively, in just the same way as quota share.

So now the reinsurer under each claim pays the following

- Property 1 - \$4,000,000 (80% of the claim amount of \$5,000,000)
- Property 2 - \$125,000 and \$25,000 (25% of the claim 1 Of \$500,000 and claim 2 Of \$100,000)
- Property 3 - \$560,000 (70% of the claim of \$800,000)

Here we see that the claim of \$500,000 on property 2 is bigger than the estimated maximum loss for that property at \$400,000. the claim will be split in the agreed proportions. This risk of under-estimation has to be accepted by the insurer and reinsurer.

However if the insurer's underwriting mechanism is a flawed one, where-in it continuously mis-estimates the maximum loss on risks, it is unlikely that the reinsurer will continue to accept business on these terms in the future.

4 Proportional Reinsurance

❑ Uses of Surplus Reinsurance

The advantages of surplus reinsurance are :

- It allows the insurer to take on risks, that he would otherwise not be able to take because of their size
- It allows the insurer to spread the risk
- It provides additional flexibility. The insurer need not retain the same proportion of every risk, thus achieving a well balanced portfolio.

It however results in a more complex administration and hence higher administration charges when compared to a quota share treaty. Complexity in administration is due to the need to assess and record separately for each risk the amount to be ceded.

Also, unlike quota share, under surplus reinsurance a limit cannot be placed on the cost of very large claims.

5 Non-Proportional (Excess of Loss) Reinsurance

➤ Excess of Loss Reinsurance

Proportional reinsurance does not cap the cost of very large claims that may occur, either as a single claim, or a set of claims from related incidents, or on an insurer's whole account. 'Large' in this context means large relative to the ceding provider's solvency margin or annual premiums.

In case of proportional reinsurance, the claim on a risk may be potentially unlimited. Thus, even if the insurer retains only 30% of a particular risk, his loss is not capped.



Excess of loss (XL) reinsurance is non-proportional cover where the cost to a ceding company of such large claims is capped with the liability above a certain level being passed to a reinsurer. However, if the claim amount exceeds the upper limit of the reinsurance, the excess will revert back to the ceding company.

Variations of this form of reinsurance cover exist to limit a ceding company's losses.

5 Non-Proportional (Excess of Loss) Reinsurance

For example within excess of loss reinsurance :

- The limit may be on individual claims or on aggregate claims
- There's an upper limit beyond which the reinsurer's liability ends
- The reinsurer is liable to pay all the claims within the specified limit or only a proportion of the claims within the limits, for instance he might pay 90% of the risk, just to ensure that the insurer has some interest in the risk.
- The specified limit is inflation linked, to protect the policyholder's interest and ensure that cover is not eroded over time.

Under such an arrangement, the reinsurer agrees to indemnify the insurer for the amount of any loss above a stated excess point.

The reinsurer provides cover up to a specified upper limit, any remaining claim amount above the upper limit needs to be covered by purchasing further layers of XL cover, from different reinsurers, which stack on top of the primary cover.

5 Non-Proportional (Excess of Loss) Reinsurance

The topmost cover of an excess of loss reinsurance might be unlimited, without any upper limit.

The layers of reinsurance should be arranged in such a manner that even the slightest amount of claim covered under reinsurance is not left out. The lower limit of the second layer of reinsurance must start at the upper limit of the first excess of loss reinsurance.

So a contract that provides cover for claim amounts between an excess point of \$100,000 and an upper limit of \$250,000 can be termed as:

'\$150,000 in excess of \$100,000'

There are three main types of excess of loss reinsurance:

- risk XL
- aggregate XL
- catastrophe XL.

5 Non-Proportional (Excess of Loss) Reinsurance

➤ Risk Excess of Loss (Risk XL)



Risk XL is a type of excess of loss reinsurance that relates to individual losses. It affects only one insured risk at any one time.

Here the insurer pays a premium to the reinsurer in return for protection against large individual claims on individual risks.

- Difference Between Risk XL and Surplus Reinsurance

Where a risk event can only result in the payment of the full sum insured, or no payment at all, there is no difference between the claim amounts under individual risk XL and surplus reinsurance. This is the case with term assurance on a single life – either the life assured dies within the term or not, and there is no possibility of a claim for less than the full sum insured.

5 Non-Proportional (Excess of Loss) Reinsurance

For example, consider two reinsurance treaties:

- a surplus treaty with a retention limit of £300,000
- a risk XL treaty covering £700,000 in excess of £300,000.

For both treaties, a term assurance on a single life with a sum assured of £1,000,000 would result in a reinsurance recovery of £700,000 in the event of death.

However the two types of reinsurance differ if there is a claim for less than the full sum insured, as in the case of general insurance.

Consider the same two contracts as in the previous example, except here we are covering a general insurance risk such as commercial property. For the property the EML is taken as £1,000,000, the proportion retained under the treaty will be 30%.

In the event of a claim for £1,000,000, both the treaties would give a reinsurance recovery of £700,000. However, in case of a claim for £500,000, the recovered amount under the surplus treaty would be £300,000, and that under the risk XL treaty would be £200,000.

5 Non-Proportional (Excess of Loss) Reinsurance



An insurance company has risk excess of loss insurance arranged on a case-by-case basis on each of the following three risks:

- Property 1 – a claim for £5,000,000, retention limit of £2,000,000
- Property 2 – claims for £500,000 and £100,000, retention limit of £300,000
- Property 3 – a claim for £800,000, retention limit of £300,000.

Calculate the reinsurance recoveries under each claim, assuming that there is no upper limit to these recoveries.

➤ Aggregate Excess of Loss (Aggregate XL)

Events can occur which involve losses to several insured risks within a period of perhaps a year. Such events could lead to an aggregation of claims. Individually, each claim might not be of exceptional size, but collectively the aggregate cost might be damaging to the ceding provider's gross account. A winter influenza epidemic is an example of where aggregation of losses can occur.

5 Non-Proportional (Excess of Loss) Reinsurance

The conventional risk XL treaty, by treating each claim as a separate loss, will fail to protect the ceding provider adequately against the aggregate cost of such losses.



Aggregate XL covers the aggregate of losses, above an excess point and subject to an upper limit, sustained from a defined peril (or perils) over a defined period, usually one year.

In layman's language, aggregate XL is nothing but an extension of Risk XL, where the excess point and the upper limit apply in an aggregate manner on a number of claims over a particular period instead of operating on large individual claims



When all perils are covered for a ceding company's whole account, or for a major class of business within the whole account, this is sometimes referred to as Stop Loss reinsurance.

5 Non-Proportional (Excess of Loss) Reinsurance



A general insurance company has the following reinsurance arrangements, which operate in the order listed:

- a risk XL treaty covering £250,000 in excess of £200,000
- an aggregate XL treaty covering £1,500,000 in excess of £600,000.

Three policies gave rise to three claims, covered by these treaties, which were for the following amounts:

1. £400,000
2. £600,000
3. £200,000.

Calculate the total claim amount recoverable under each reinsurance treaty.

5 Non-Proportional (Excess of Loss) Reinsurance

➤ Catastrophe Excess of Loss (Catastrophe XL)

Such a treaty is an extension of aggregate excess of loss reinsurance, covering extremely high aggregate losses as a result of a single catastrophic event. The losses may be spread over a number of hours following the initial event – around 24 – 27 hours.



The aim of catastrophe reinsurance is to reduce the potential loss, to the ceding company, due to any non-independence of the risks insured.

The cover is usually only available on a yearly basis and has to be renegotiated each year.

The reinsuring company will agree to pay out if a 'catastrophe', as defined in the reinsurance contract, occurs. There is no standard definition of what constitutes a catastrophe.

The reinsurance contract will also specify how much the reinsuring company will pay if a catastrophe occurs. Typically this might be the excess of the total claim amount over the ceding provider's catastrophe retention level. The reinsuring company's liability in respect of a single catastrophe claim would be subject to a maximum amount and any amount above this would fall back on the ceding company.

5 Non-Proportional (Excess of Loss) Reinsurance

➤ Uses of Non-Proportional Reinsurance

Non-proportional reinsurance enables the provider to accept risks that might give rise to large claims. Non-proportional reinsurance also stabilises the technical results of the ceding provider by reducing claims fluctuations, thus resulting in lower volatility in the annual profits. Stability in profits is desired by the shareholders in case of a proprietary insurance company.

Lower volatility also helps in the efficient utilization of capital, as a lot of capital need not be held as a buffer for the worsening of claims experience, whereas high volatility requires large holdings of free assets. Thus the company can write the same amount of business with less capital by using excess of loss reinsurance. It also reduces insolvency risk as a result of a catastrophe or an aggregation of claims.

There are chances that the premium paid to the reinsurer after allowing for his expenses and profit be greater than the expected claim amounts paid by the reinsurer.

As for policyholders, excess of loss premiums may be greater than the pure risk premium for the cover. When reinsurers face a few poor years, resulting in reinsurers moving out of the market, the supply of reinsurance falls resulting in higher premiums.

6 Alternative Risk Transfer

Reasons why providers take out ART contracts include:

- provision of cover that might otherwise be unavailable
- stabilisation of results
- cheaper cover
- tax advantages
- greater security of payment
- management of solvency margins
- more effective provision of risk management
- as a source of capital.

6 Alternative Risk Transfer

➤ Introduction

Alternative risk transfer (ART) is an umbrella term for non-traditional methods by which organisations can transfer risk to third parties. Broadly, these products combine traditional insurance and reinsurance protection with financial risk protection, often utilising the capital markets. It is a cheaper and hassle free method of risk transfer unlike traditional reinsurance.



ART often uses both banking and insurance techniques, producing tailor-made solutions for risks that the conventional market would regard as uninsurable.

ART contracts serve to expand the list of organisations that accept risks from financial product providers away from traditional reinsurance companies. The banking and capital markets are used because of capacity issues. The risks involved in ART transactions are typically ones with which the banking and capital markets are more comfortable, such as catastrophe risk.

6 Alternative Risk Transfer

➤ Integrated Risk Covers

These are typically arranged between insurers and reinsurers.

Traditional insurance and reinsurance requires different policies to be taken for different general risks such as property damage risk, liability risk, business interruption risk, etc. Integrated risk covers several lines of risk for general insurance under a single policy. These risks are aggregated and reinsured in one block. It also covers financial risks unlike traditional reinsurance business. The excess point and upper limit applies on the integrated risk rather than a separate limit for each risk.

They are often written as multi-year, multi-line covers and will give premium savings due to cost savings and to greater stability of results over longer time periods and across more (uncorrelated) lines.

Insurers may save on negotiation expenses as there is no need to negotiate several separate reinsurance arrangements and also because integrated risk policies are multi-year arrangements.

6 Alternative Risk Transfer

This arrangement provides greater stability in terms of profits due to diversification brought in as a result of:

- Types of risk insured
- Time period of the policies

For example predicting the occurrence of a earthquake over a single year may be difficult. However, predictions over a five-year period can be more certain.

They are used to:

- avoid buying excessive cover
- smooth results
- lock into attractive terms.

They can be used as a substitute for debt or equity in the investment portfolio of the original insurer.



Suggest possible disadvantages to the insurer of integrated risk covers.

6 Alternative Risk Transfer

➤ Securitisation

This is the transfer of insurance risk to the banking and capital markets. Among other things it is used for managing risks associated with catastrophes, as the financial markets are large and capable of absorbing catastrophe risk. In general here an insurance policy is converted to a financial security.

It works in the following manner:

- An investor purchases an insurance policy from a company by paying premiums to the insurer.
- The capital and interest repayment, is contingent on a specified event not happening. Such as a fire leading to more than 70% in damages.
- If the specified event does happen, the insurer uses the premium paid by the investor to cover the cost of claims arising from the earthquake. The investor may get a part of their capital and interest back depending on the severity of the claim.
- If the event does not occur, the investor gets their interest and capital in the normal manner

6 Alternative Risk Transfer

The insurer and the investor are not directly linked with each other. A special purpose vehicle which is a separate legal entity acts as a link between them.

It involves high risk, with a zero percent return probability. However, if the investor's required rate of return is close to the expected return on the investment, then a market for such investment exists.

The rationale is that insurance catastrophe risk is not correlated with market (systematic) risk and so there is a benefit to investors. This is why banks are more comfortable in taking over these risks than insurance companies as it diversifies their risk exposure. Also banks are able to take on greater risks because of their operation sizes.

To date the pricing of such contracts has been similar to that for traditional catastrophe reinsurance and much more expensive than similarly rated corporate bonds.

6 Alternative Risk Transfer

➤ Post Loss Funding

Here capital to cover risks is raised once the risk event occurs. This goes against the conventional method of reinsurance where premiums are paid to the reinsurer by the insurer before the loss event takes place. Post loss funding allows for capital to be raised following a catastrophe under favourable terms decided in advance.

Post loss funding guarantees that, in exchange for a commitment fee, funding will be provided on the occurrence of a specific loss. The funding is often a loan on pre-arranged terms or equity.

Equity funding allows the insurer to raise capital on pre-agreed terms. The insurer may also wish to purchase a put option on its own share price. If the share price falls in wake of a catastrophe, the insurance company is in a safe zone as it has already booked the share price in advance, and can thus raise the desired capital.

The commitment fee will be lower than the equivalent insurance cost (because the cost of the funding will in the most part be borne after the event has happened). Thus, before the loss happens the contract appears cheaper than conventional insurance.

The equivalent insurance cost is the premium payable to the reinsurer.

6 Alternative Risk Transfer

➤ Insurance Derivatives

An insurance derivative is a financial instrument that derives its value from an underlying insurance index or the characteristics of an event related to insurance. Insurance derivatives are useful for insurance companies that want to hedge their exposure to catastrophic losses due to exceptional events, such as earthquakes or hurricanes.

Examples include catastrophe or weather options.

For example, an insurance derivative could offer a cash payout to its owner if a specific index of hurricane losses reached a target level. This would protect an insurance company from catastrophic losses if an exceptional hurricane caused unforeseen amounts of damage. Another example of an insurance derivative would be orange growers in Florida, who rely on derivatives to hedge their exposure to bad weather that could destroy an entire season's crop. The orange growers purchase derivatives that allow them to benefit if the weather damages or destroys their crop. If the weather is good, and the result is a bumper crop, then the grower is only out the cost of purchasing the derivative.

6 Alternative Risk Transfer

Swaps

Organisations with matching, but negatively correlated risks can swap packages of risk so that each organisation has a greater risk diversification. The organization can come closest to swapping uncorrelated risks to achieve diversification, if negatively correlated risks aren't available.

Example 1 – Reinsurance Swap

For example, a reinsurer with exposure to Japanese earthquakes may swap some of this risk with a reinsurer with exposure to hurricanes in Florida.

Example 2 – Longevity Swap

With increasing volumes of annuities as the post-war 'baby boom' generation in developed countries ages, longevity swaps are becoming popular. The terms may be similar to a traditional swap, where fixed part is based on the expected annuity payments and the floating side is based on the actual annuity payments.

6 Alternative Risk Transfer

Example 3 – Weather Swap

Swaps can also be set up between non-insurance organisations with opposite risks.

For example, energy companies dislike warm weather as consumers use less of their product. Conversely, household insurers dislike cold weather as it leads to insurance claims. The two organisations can, however, swap their risks.