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Task 1

1. Defining Characteristics of Treaty Reinsurance

Definition of Treaty Reinsurance

Treaty sessions are a variant of reinsurance wherein the ceded company contracts a reinsurer to accept the risks according to a prearranged plan and stipulations in a particular risk-sharing treaty known as a reinsurance treaty. The indemnification so secured specifies the precise portion of the ceding company's pool of risks that the reinsurer will assume, usually for a set amount of time with a fee paid in advance (Pohl and Iranya, 2018). Unlike facultative risks that require negotiations specifically for individual situations, treaty reinsurance offers a permanent policy that covers a wide range of risks in accordance with the scope of the agreement (Pohl and Iranya, 2018).

Key Features and Characteristics

Treaty reinsurance, in fact, has a number of distinguishing traits and attributes that are different from those of other reinsurance types. Treaty reinsurance is not different from the contractual agreement between the two parties, which may be a ceding company and the reinsurer. The contract is signed to protect the value of the reinsurance arrangement's terms and conditions and its limits (Payandeh Najafabadi and Atatalab, 2024). These words usually are agreed upon through a consented negotiation process before the government of reinsurance contracts, and this will help both parties to operate within a clear and specific guideline.

The second key feature of treaty reinsurance concerns the portfolio basis, meaning the reinsurer covers, at the request of the risk retentions, a specified portion of its all-risk exposure for the insurance policies or various lines of business (Payandeh Najafabadi and Atatalab, 2024). This approach enables Decedent Company to proportionately share a major risk expectation with the reinsurer firm and therefore attain the stability and security of their business against large losses and catastrophic events (Cheung and Lo, 2017).

Reinsurance treaties also possess an automatic feature, whereby these risks of agreement remain covered as long as they are eligible and fall within the agreement’s scope (Cheung and Lo,

2017). Unlike facultative reinsurance, which requires the ceding company to select every risk separately for underwriting purposes, treaty reinsurance creates uninterrupted coverage that perfectly matches the cadent portfolio without individual reinsurance for each risk (Cheung and Lo, 2017).

2. Types of Reinsurance:

Facultative Reinsurance

Facultative reinsurance is a type of reinsurance that requires the reinsurer to evaluate and accept each of the risks on an individual basis. The cover holder has the task of forwarding to the reinsurer certain items of risk of interest to the latter, who is in turn entitled to select or decline any one of them, as it will depend on the helping attitude of the reinsurer (Townsend, 2022). Facultative reinsurance procedures are specific for large and complex risks that lie beyond the limits of the ceding company's treaty reinsurance arrangement or to cover risk amounts that are above the treaty limits. Reinsurance on demand that is facultative (or discretionary) provides for more flexibility and personalization in risk transfer, as each risk is underwritten separately and the conditions can be formulated specifically depending on the attributes of each particular risk (Townsend, 2022).

Treaty Reinsurance

Treaty reinsurance, also known as a reinsurance agreement, is where the reinsurer will cover a predetermined portfolio of risks that meet certain terms and conditions that were already defined in the treaty signed (Jiang, et al., 2019). Unlike facultative reinsurance, the other form of reinsurance that ignores a particular case based on the reasons likely to make the claim due to a specific risk, treaty reinsurance operates instantly by covering any losses arising from events and risks that happen to fall within the scope of the treaty (Jiang, et al., 2019). The agreements of treaty reinsurance can be specific, for example, if they cover property, proclivity, or life; thus, some of the provisions they include are premium calculations, coverage limits, claim handling procedures, and termination clauses. Bilateral (treaty) reinsurance is enhancing the attractiveness of re-insured lines since stable and ongoing coverage for a wide range of risks is ensured without individual negotiation for each specific risk (Stellner, 2021). Along with treaty reinsurance, it allows them to pass on a significant

part of their risk exposure to the reinsurer, thus ensuring their financial stability and avoiding losses from catastrophic events or even unpredictable losses (Stellner, 2021).

3. Methods of Reinsurance:

Proportional Reinsurance

Pro-rata reinsurance, sometimes called "proportional reinsurance," is when both the ceding enterprise and the reinsurer divide premiums and losses according to the percentages they have agreed on (Andrushchenko, 2017). Among the several types of reinsurance, proportionate reinsurance is one such agreement that pre-determines the portion assumed by the reinsurer from the ceded risk of the ceding company; when this happens, the ceding company pays the reinsurer with the proportional share of the premiums collected. When a claim manifests, reinsurers reimburse the ceding firm in accordance with the loss-sharing arrangement. Zones of reinsurance can emerge through quotas and extra-charged reinsurance (Andrushchenko, 2017). In quota share reinsurance, the reinsurer is obliged to provide coverage for a proportion of all the policies issued by the first company, while in surplus reinsurance; it covers losses exceeding a particular retention value. Although pro rata reinsurance offers a simple and straightforward sharing of risk between the cede company and the reinsurer, the structure provides predictability and stability in rates and claims by shelving off the volatility that comes as a result of fluctuations in the market.

Non-Proportional Reinsurance

Non-proportional reinsurance that works under the name excess of loss reinsurance means that the reinsurers would compensate ceding companies for losses that exceed a threshold that can be either a certain amount or a percentage of the ceding company’s surplus or net retained liability (Johnson, 2023). In the case of proportional reinsurance, the payout depends on the participating insurer’s individual risk-sharing dialogue. In the case of non-proportional reinsurance, the insurer only takes action when the loss exceeds the limit, which was previously agreed upon. Ant proportional reinsurance is the mechanism that protects a decant company from huge or unforeseeable losses that exceed its already low risk tolerance or high loss absorption capacity (Johnson, 2023). Through this, the first withdrawing party will be able to transfer the financial complications that are brought forth

by huge losses onto the reinsurer, bringing greater financial stability and security to counter any negative occurrences. Non-proportional excess of loss reinsurance is carried out under the headings quota share reinsurance, proportional reinsurance, aggregate excess of loss reinsurance, and ultimately stop-loss reinsurance.

4. Treaty Reinsurance in Contemporary Practice:

Overview of Treaty Reinsurance Usage

While treaty reinsurance is a popular practice in the modern insurance industry, where the ceding company and reinsurer enter a legally binding agreement to share the ceding company's risks, reinsurers take on a predetermined portion of the risks. Reinsurance may be made on different deals and classes of business and other insurance policies. It defines the boundary conditions, limits, and terms of the reinsurance coverage (Yuen, et al., 2015). The treaty reinsurance mechanism offers primary insurers a systematic and prudent way of transferring their hazardous risks to reinsurers through the security arrangement. By doing so, an insurer is able to reduce the use of their capital resources, improve the spreading of their risk, and bolster their underwriting capacity through reinsurance.

Advantages and Disadvantages

Counterparty Risk:

Ceding companies are exposed to counterparty risk, as the financial stability and creditworthiness of the reinsurer may affect the effectiveness of the reinsurance protection.

Limited Customization:

Treaty reinsurance agreements are typically standardized and may not fully address the unique needs and preferences of ceding companies, limiting their ability to tailor coverage to specific risks or portfolios.

Role in Risk Management Strategies

Treaty reinsurance plays a pivotal role in the risk management process adopted by cedants as it lends the necessary coverage to transfer risks and provides vital financial aid against adverse events (Han, et al., 2019). Through catastrophic loss ceding treaties, ceding businesses can control their coverage properly, respond to substantial risks, and reinforce financial resilience. The synergy of treaty reinsurance enables the market player to diversify the construction of the risk and improve the level of capital efficiency with a view to satisfying the regulations of the market, thus maintaining the long-term development and sustainability strategies. Apart from that, treaty reinsurance gives their responsible companies not only the global market reach but also the capacity and expertise of reinsurers, which are at a high level and, of course, enhance their competitiveness and increase their success in complicated insurance environments (Han, et al., 2019).

5. Types of Treaty Reinsurance:

Quota Share Treaty

In the ceding treaty, the ceding insurance company and the reinsurance company agree to share insurance risks and premiums, which contain the specific source and class of business according to the predetermined percentage (Clemente, 2018). An example might be that a given company sells 50% of its business outcome, risk, and premium to the reinsurer. Such treaties let reinsurers cede part of the risk on an appropriately proportional basis, collect premium income to improve capital efficiency, and get access to multiple reinsurers at once (Clemente, 2018).

Surplus Share Treaty

The surplus share treaty, the excess surplus treaty, or the non-proportional treaty is also a type of treaty that allows the decant to keep the risks that have already been decided, and the rest could be passed on to the reinsurer (Pearson, 2022). Contrary to quota share treaties, surplus share treaties are designed only to cover losses going beyond the specified retention limit, with the surplus portion of the risks being covered by the reinsurer. As flexible instruments, surplus share treaties decedent

companies retain driving force over the main insurance business while enjoying reinsurers' support in large or catastrophic risks covered by additional capacity (Pearson, 2022).

Excess of Loss Treaty

Excess limit treaties, also known as excess proportional treaties, are tools ceding companies use to prevent catastrophic losses exceeding the retention points (also known as attachment points) from affecting them (Pearson, 2022). The insurer will cover the losses over and above the retention level to the amount agreed to or to the set limit with the reinsuring company under a loss treaty contract. The availability of unlimited reinsurance treaties gives upstream insurers a financial advantage and freedom from the dread of a single large or unforeseeable loss by transferring the sizeable and unpredictable risks to reinsurers, preserving their assets and solvency (Pearson, 2022).

Stop Loss Treaty

The stop-loss treaties, like excess-loss treaties, put forth coverage for the companies that were ceded to ensure that catastrophic losses exceeding a given threshold are protected. What then makes stop-loss treaties different is that such plans offer some insurance coverage in the form of an aggregate amount, such as for a policy year or accounting period. If the total sum of the losses endured by the decant organization during the coverage period exceeds the stop-loss threshold, the reinsurer shall be responsible for settling the remaining amount (Haueter, 2020). The stop-loss clauses form anchors that firm up the decant in the sense that they are able to manage their exposure to high frequency, low-severity losses, therefore ensuring financial stability and predictability. Various forms of treaty reinsurance are available to ceding companies. Through those reinsurance agreements, the ceding companies can also tailor their reinsurance programs accordingly, depending on their appetite for risks, their financial objectives, and their underwriting strategies (Haueter, 2020).

6. Methods of Treaty Reinsurance:

Quota Share Method

The quota share method is an ultimate proportional reinsurance arrangement where the ceding insurer and the reinsurer agree to share both premiums and losses based on a previously agreed

percentage (Haueter, 2020). The decant in this case would be the company holding on to a fixed share of every policy's premium and sending the remaining portion to the reinsurer. Unlike the direct insurer, who gets the entire claim for the cause, the ceding company retains the given percent of the loss, and the reinsurer reimburses the remaining one in accordance with the same quota share percentage.

Surplus Method

The surplus method, otherwise known as a "surplus share treaty," is a non-proportional reinsurance agreement in which a reinsurance company takes on risks that go beyond a certain limit set by the ceding company. Unlike quota-share agreements, where higher premiums and losses are shared based on an already agreed percentage, surplus treaties only pay reimbursements for expenses exceeding the loss retention of the ceding company. Parties negotiate a specific amount, and if a catastrophic event occurs, the reinsurer shall assume the retention level together with the surplus portion of risks above the limit, thus creating surplus capacity for the ceding company with no risk of loss being covered (Haueter, 2020).

Excess of Loss Method

This method, known as the catastrophe or non-proportional excess treaty, gives reinsurers resistance to catastrophic losses that exceed a fixed threshold and the contractual loss retention or attachment point. This procedure means that an excess loss reinsurer would pay a reimbursement to the ceding company for losses above the limit in terms of retention up to the preset limit or to the maximum coverage. However, excessive use of such treaties grants legal obligations to the reinsurers and, at the same time, provides stability to the ceding companies by transferring the volatility fund risk to reinsurers, hence preserving their financial cushions. By applying this technique, the ceding insurer can hedge against catastrophes to the extent they want but remain in their own hands with respect to controlling their core insurance operations (Haueter, 2020).

The mix of treaty reinsurance transfer mechanisms helps a reinsurer provide a variety of risk transfer solutions that can be customized to meet the needs of their clients concerning their financial

interests and underwriting policies (Haueter, 2020). The choice of reinsurance method depends on many unique characteristics and advantages that will give the ceding companies the opportunity to be flexible and be the decision-maker as they address the risks incurred from the insurance coverage.

7. Considerations in Selecting Reinsurance Methods:

Risk Appetite and Risk Exposure

Lender companies of this kind had to determine their level of risk and diversification before making the choice of reinsurance options. While different reinsurance methods transfer cover amounts to various degrees and aspirations to secure the risk entirely, Companies intending to leverage the higher risk appetite could adopt quota share treaties, some forms of proportional reinsurance methods that offer premium and loss sharing proportionally (Shavell, 2018). On one hand, companies with a moderate risk appetite or even those seeking partial protection against catastrophic losses may be more inclined to proportional methods such as quota shares, which provide coverage for losses below a defined limit. However, in the event of extremely high losses, excess loss treaties come into play and offer protection for losses above this threshold amount. Appreciating the company's risk profile and what precautions the company puts in place is vital in settling for a better reinsurance method.

Financial Considerations

The financial considerations are critical when trying to pick the reinsurance method, as they affect the cost of reinsurance, its type, and the long-term stability of the company. Reinsurance agents must make sure that the cost of the premiums and the company's budget for insurance are reasonable, taking into account the constraints in the financial and budget (Shavell, 2018). Similarly, firms do need to evaluate the potential effect of reinsurance recoveries on their financial statements, including how it would affect the profitability rate, the capital adequacy, and the return of investors. Selecting the optimal reinsurance technique may be a complicated task, and you will need to carefully consider which of the costs and benefits you prefer to grapple with in order to keep the organization on track and successful in the long term.

Regulatory Requirements

The regulatory framework and the necessity of compliance with the law and other obligations that apply to insurers affect the method of reinsurance selection, as insurers must operate according to the existing legal rules, regulations, and industry standards. Regulatory institutions might set certain capital relevance criteria, solvency ratios, and total risk-based capital systems that will define the types and amounts of reinsurance coverage insurers should maintain (Shavell, 2018). The handing-over businesses are required to adhere to lawful directives by maintaining a reinsurance program that is fully compliant, with necessary reserves being held as well as capital that is more equivalent. More so, this also means more cross-border reinsurance transactions that require them to work among different regulatory systems and to ensure they comply with various standards and regulations that apply in their transacting nations.

Task 2

1. Overview of the Incident:

In such a scenario, where the Francis Scott Key Bridge in Baltimore was destroyed by the containership Dali, several points would either cause the reinsurance treaties, facultative covers, or go to liability costs with their retained or within the International Group's P&I reinsurance. It could very well trigger hefty financial and legal implications, which would then touch upon several stakeholders and might even cause serious financial damages to them. Secondly, the reduction of the wreck-caused damages could highlight both positive and negative factors (Mercer, 2017). The bridge damage's legal liabilities might be greater than the primary insurer's coverage limits when large amounts of property damage or bodily injury occur or the surroundings are polluted. In situations of large and unexpected losses, reinsurance treaties, through which reinsurers offer additional cover when the limits of primary insurance are reached, would then be used to cover the excess claims value. The examples and additional features that train innovation covers provide, in contrast, are facultative specialty coverages that are meant to guard against the kinds of risks or occurrences not covered under standard insurance policies.

2. Liability Costs and Insurance Coverage:

In the aftermath of the Francis Scott Key Bridge incident, which involved the containership Dali accident, liability costs and insurance coverage are primary factors in containing the financial impact. The liability costs include a wide range of items: property damage and bodily injury, environmental sanitation, expenses on trials and their outcomes, and economic losses. Insurance coverage acts as the main tool that helps the insured person manage the financial impact of these liabilities, as it compensates for and protects them from the payments (Mercer, 2017). Under these conditions, the primary insurance policies should usually protect the containership owner as well as other involved parties from liability arising in connection with the downfall of the bridge. These primary insurance policies, designed to address maritime risks, offer coverage against hull and machinery damage, protection or indemnity (P&I) liabilities, and other connected risks. Yet, insurance may have a limited range of coverage, primarily if the incidence includes wide damages or the

maximum limits of a policy. Correspondingly, when such instances arise, reinsurance tiers come into aid to provide some additional layers of financial protection. Reinsurance contracts, which are a kind of agreement between risk covers provided by insurers and reinsurances whose liability can be transferred, can be employed to spread the financial burden after large-scale losses (Mercer, 2017). Such treaties can meet over-insurance requirements for which primary insurance is insufficient, thereby enhancing coverage capacity and providing a higher-limit cap. Besides other forms of reinsurance, facultative reinsurance in this case has specialized coverage for incidents that are usually not bothersome in standard insurance policies or labeled as cataclysmic.

3. Reinsurance Treaties:

Treaties allowing for reinsurance have become the deals signed between day-to-day insurance companies and specialized backup providers for sharing responsibilities and risks relating to financing insurance deals (Mercer, 2017).

Definition of Reinsurance Treaty

The reinsurance treaties stipulate the provisions, conditions, and other terms applicable to the reinsurance arrangement that has been established between the company (the ceding insurer) and the reinsurer, respectively (Mercer, 2017). These guidelines categorize the schemes in which risk sharing happens, the method of premium calculation, and, of course, the limits of coverage and others that form the reinsurance relationship.

Types of Reinsurance Treaties:

There are different options for reinsurance agreements: some cover specific needs, others address specific weather risks or specific geographical areas. The most well-known forms of these include quota share agreements, surplus share agreements, stop-loss agreements, and excess-of-loss agreements (Mercer, 2017). The treaties differ from one another in the way they shift risk to the other party or spell out the coverage of the treaties.

Premium Calculation:

The premium itself that the underlying insurer can charge the reinsuring company is a function of a number of key parameters specific to their reinsured portfolio, like the portfolio´s exposure, loss experience, coverage limits, and other risk-related parameters (Mercer, 2017). Rates may be on a monthly basis or as a whole, but they are subject to certain terms and conditions of the contract.

Duration and Renewal:

Insurance treaties between countries that are in effect usually cover periods ranging from a year up to several years (Mercer, 2017). At the end of each period, insurers may opt to renew the treaty for another, renegotiate the terms, or terminate it, provided they sufficiently evolve their portfolios of risks and strategic objectives.

Risk Allocation

Reinsurance agreements define the way risks are spread out between the primary insurer and the reinsurer based on levels or shares previously agreed upon. Under the quota share agreement, the underwriting and premium sharing ratios are calculated by a certain percentage, which corresponds with the shares held by the decant and co-insurer, respectively (Mercer, 2017). The insurer's treaties, by definition, will enable the reinsurer to cover some of the risks exceeding the insurer's retention limit, on the other hand.

Claims Settlement

It is only in the situation described above that the reinsurer will have to offset covered losses for the ceding insurer by adhering to the reinsurance terms. Claim settlement policies, including notifications, document review, and dispute resolution procedures, are typically highlighted in the implemented treaty to allow efficient handling of claims (Mercer, 2017).

Facultative Covers:

Facultative covers of reinsurance firms are designed to be a particular type of reinsurance arrangement that aims at solving some specific risks or certain insurance policies. As opposed to treaty reinsurance, where the deal involves numerous and wide-ranging risk-sharing lump-sum items, facultative covers are negotiated separately to suit each unique or non-standard risk.

Individualized Risk Assessment

An essential feature for reinsurers is to determine whether reinsures involve facultative covers or not, which means that reinsurers assess and underwrite risks based on an individual risk basis, providing them with the flexibility to determine the terms, conditions, and premium for the coverage (Brown, et al., 2019).

Risk Selection and Underwriting Expertise

Reinsurers' expertise in this area lies in their ability to evaluate risk with precision and accordingly price the coverage by utilizing their exclusive knowledge, data analytics, and risk modeling capabilities (Brown, et al., 2019).

Financial Stability and Solvency Support:

Reinsurance, the key advantage of the program, increases the financial steadiness and solvency of the clubs by providing an extra layer of protection should they suffer from long-term or catastrophic events (Brown, et al., 2019). The recoveries of reinsurance from the central pool enable the keep-away of the part contributed by adverse events, preserve the recourses of the club, and provide a guaranteed settlement for the genuine claims.

Although facultative coverage is considered an insurance solution for semi-predictable losses or non-conventional risks, it makes it an important part of insurance companies' risk management portfolios (Brown, et al., 2019). Multiplying the scope of syndicates, reinsurers, and individualizing coverage conditions, the par faculty covers provide the insurers with risk management means and protection against unpredictable factors, thus helping them adapt to fast-changing business conditions and develop sustainably.

4. International Group's P&I Reinsurance Program:

The Pooling and Indemnity Fund, a collective reinsurance mechanism operating within the group of member Protect and Indemnify clubs, is an arrangement set forth to boost the cover against third-party liabilities emanating from marine risks (Jennings and Trautman, 2016).

Collective Risk Pooling:

The International Group made by mutual P&I clubs is they do a pool of those financial resources that, in turn, are related to the risk sharing that through the reinsurance program. Each member club participates in a general reinsurance pool by paying a respective premium, which stands to cover the claims fund (Jennings and Trautman, 2016). The step-down mechanism provides coverage up to prearranged limits for the individual clubs' liabilities.

Risk Sharing and Spread of Exposure:

The settling of the P&I premiums helps members transfer and switch their exposure to big and colossal liabilities, which are dealings with maritime ventures. By applying common efforts and covering different risks that individually might be unmanageable in separate clubs, the reinsurance program ensures financial sustainability and resilience to unexpected losses (Jennings and Trautman, 2016).

Layered Reinsurance Structure:

P&I reinsurance is usually structured as multi-tiered or layered reinsurance, having several tiers or "layers" of reinsurance coverage. Each level has its own category of liability exposure, which comes with certain limits and points of insurance trigger. The levels could be anything from loss reinsurance with excess, aggregate stop loss coverage, and cat reinsurance with that after (Jennings and Trautman, 2016).

5. Risk Mitigation and Loss Prevention Measures:

Risk mitigation and loss prevention measures are inevitable components of successful maritime risk management approaches; however, they are primarily applied for liability exposures related to shipping activities.

Safety Management Systems (SMS):

Being consistent and the ISM Code rules could enrich the security system, ease regulatory requirements fulfillment, and makes improbable the accidents and incidents (Paul, 2015).

Training and Education:

The enterprising training and education for seafarers, such as crewmembers, officers, and work ashore personnel, will be competent; they will be alert to safety measures; and their safety culture will be reinforced throughout the organization.

Vessel Maintenance and Inspection:

There are many things that can cause a breakdown; the biggest ones are mechanical failures and accidents (Paul, 2015). Regular maintenance, inspection, and repair are essential parts of averting this serious problem that can potentially put lives and the environment at risk.

Security Measures:

Incorporating security measures will be most effective in reducing the risk of different kinds of security threats, including piracy, terrorism, and strange access to ships or vessels (Paul, 2015). Access control measures, the constant presence of security staff, and anti-piracy measures are considered reliable strategies for security.

Conclusion

The maritime industry cannot be successful without proper risk management and environmental protection. These two aspects are crucial to the safety of human lives at work, assets, and the environment (Scott, 2021). The application of comprehensive safety management systems, together with an extensive training regime, a broad preventative maintenance plan, strict compliance with legislation, and the use of innovative technologies and best practices, allows maritime enterprises to manage the risks of losses associated with operations in the marine domain (Scott, 2021). What is more, preventative measures like pollution prevention, cargo handling protocols, and weather monitoring, together with port security measures, are very important for the provision of a safe and secure network. Ensuring a safe and consistent environment for operational activities is a role of safety culture, continuous improvement, and regulatory compliance in the maritime industry, facilitating the industry to address challenges and control risks more effectively (Scott, 2021).

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