



Specimen coursework assignment

M97 – Reinsurance

The following is a specimen coursework assignment including questions and indicative answers.

It provides guidance to the style and format of coursework questions that will be asked and indicates the length and breadth of answers sought by markers. The answers given are not intended to be the definitive answers; well-reasoned alternative answers will also gain marks.

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Coursework submission rules and important notes

Before commencing work on, or submitting, your coursework assignment it is essential that you fully familiarise yourself with the content of *Mixed Assessment Candidate Guidelines*. This includes the following information:

- Answers to a coursework assignment should be between 5,000 and 10,000 words in total depending on your writing style.
- Arial font and size 11 to be used in your answers.
- Important rules relating to referencing all sources including the study text, regulations and citing statute and case law.
- Penalties for contravention of the rules relating to plagiarism and collaboration.
- Six month deadline from enrolment date for the submission of coursework answers.
- The total marks available are 200. You need to obtain 120 marks to pass this assignment.
- Do not include your name or CII PIN anywhere in your answers.

Top tips for answering coursework questions

- Read the Learning Outcome(s) and related study text for each question before answering it.
- Ensure your answer reflects the context of the question. Your answer must be based on the figures and/or information used in the question.
- Ensure you answer all questions.
- Address all the issues raised in each question.
- Do not group question parts together in your answer. If there are parts (a) and (b), answer them separately.
- Where a question requires you to address several items, the marks available for each item are equally weighted. For example, if 4 items are required and the question is worth 12 marks, each item is worth 3 marks.
- Ensure that the length and breadth of each answer matches the maximum marks available. For example, a 30 mark question requires more breadth than a 10 or 20 mark question.

The coursework questions link to the Learning Outcomes shown on the M97 syllabus as follows:

Question	Learning Outcome(s)	Chapter(s) in the Study Text	Maximum marks per answer
1	Learning Outcomes 1, 2 & 3	Chapters 1, 2 & 3	10 marks
2	Learning Outcomes 1, 2, 3 & 4	Chapters 1, 2, 3 & 4	20 marks
3	Learning Outcome 5	Chapter 5	20 marks
4	Learning Outcome 6	Chapters 6 & 9	30 marks
5	Learning Outcomes 7 & 8	Chapters 7 & 8	10 marks
6	Learning Outcome 9	Chapter 9	20 marks
7	Learning Outcome 10	Chapters 10, 11 & 12	30 marks
8	Across more than one Learning Outcome	Across more than one chapter	30 marks
9	Across more than one Learning Outcome	Across more than one chapter	20 marks
10	Across more than one Learning Outcome	Across more than one chapter	10 marks

M97 specimen coursework questions and answers

Question 1 - Learning Outcomes 1, 2 and 3 (10 marks)

EDP plc is an established property reinsurer which has traded successfully for many years. EDP plc is approached by KPY plc, a newly created property insurer, who will commence trading in a few months time.

Explain, with justification, the **two** most significant considerations which EDP plc will need to take into account in deciding whether to reinsure KPY plc. (10)

Answer to Question 1 (Learning Outcomes 1, 2 and 3)

Underwriting policy

In the absence of claims experience for this newly created insurer, EDP plc (EDP) will need to analyse KPY's (KPY) underwriting policy and strategy. This will focus on the proposed risk profile and will adjust KPY's projections to take into account EDP's own detailed knowledge of the property market.

The underwriting policy will include fundamental information such as KPY's proposed lines of business and their target markets, but should also include proposed extent of cover, when (and with what wordings) exclusions will be applied, KPY's proposed retention, the proposed table of limits and any other reinsurance that will be applied for.

All of these details can give EDP insight into the nature of the business they will be asked to reinsure and can materially affect the levels of liabilities that will arise. For example, if KPY are not judged to apply exclusions appropriately then EDP may need to increase reinsurance premiums to take into account potential extra losses, and may be reluctant to offer reinsurance cover at all.

Personnel

Since KPY are a new business, EDP will be aware their proposed underwriting policy is only theoretical. EDP will want to understand the level of experience of all relevant staff members, including those underwriters who will be accepting the risks on EDP's behalf. They will also seek to understand the experience of staff who are indirectly involved in the underwriting operation, including senior management, who can influence overall underwriting strategy, claims handling and accounting.

If KPY's staff are deemed to be of poor experience, then EDP risk suffering additional liabilities. This could be because an underwriter has erroneously accepted a risk, or a claims handler has failed to apply an exclusion or other policy limitation. Positive information confirming good experience in key staff will reassure EDP that the underwriting policy, presented to them in theory, will be applied in practice.

Question 2 - Learning Outcomes 1, 2, 3 and 4 (20 marks)

JKC plc, a non-life insurer, underwrites a diverse portfolio of risks. Some of these risks are very significant in terms of sums insured and potential for major losses.

- (a) Discuss why JKC plc may choose **not** to place certain elements of its reinsurance requirements under treaty reinsurance. (8)
- (b) Explain, with justification, **two** alternative methods of risk transfer that may be used for certain elements of the portfolio other than treaty reinsurance. (12)

Answer to Question 2 (Learning Outcomes 1, 2, 3 and 4)

- (a) In markets where immediate acceptance is not essential, facultative reinsurance can be preferable since it can increase an insurer's competitive edge, allowing them to shop around for the best rates. The insurer is free to consider any risk, and there is more chance of finding a reinsurer with the appropriate risk appetite if JKC are not restricted to a single treaty reinsurer.

Treaty reinsurance rates can be improved if some of the poorer risks in the insured block of business are removed from the treaty and reinsured facultatively elsewhere.

This is because the treaty reinsurer can expect lower liabilities and the net effect can often be lower overall reinsurance costs.

A facultative reinsurer may have specialist knowledge relating to an unusual risk which can inform JKC's underwriters and allow them to offer competitive premiums without incurring losses. Such knowledge may not be available from their treaty reinsurer.

Facultative reinsurance allows JKC to try out a different reinsurer with whom they may build a lasting relationship – potentially as a precursor to future treaty arrangements. JKC may not be happy to cede a disproportionate amount of premium on smaller 'good' risks to a treaty reinsurer. They may prefer to retain more of these net for their own account and apply for facultative cover only for selected 'poorer' risks.

JKC may not be able to obtain acceptable levels of cover under treaty reinsurance arrangements. For example, reinsurers may wish to exclude certain risks from a treaty due to a low appetite for those policies, but cover may be available facultatively.

(b) **Facultative reinsurance**

Facultative reinsurance is the oldest type of reinsurance. Whereas a treaty obliges an insurer to reinsure certain business, and a reinsurer is obliged to accept it, facultative reinsurance involves the individual consideration and placement of risks. (CII study text, M97 Reinsurance, 2016, P3/2)

The key feature of facultative reinsurance is that it is optional. Both parties can consider the details of a particular risk, their appetite for accepting it, and the premium they feel is reasonable. Each must agree to terms on each risk presented and each agreement forms a separate contract.

Facultative reinsurance is especially suited to some situations, for example where a risk is excluded from existing treaty reinsurance, or where a good, but large, risk is outside of an insurer's underwriting capacity. A facultative agreement could allow an insurer to cover any excess capacity and means it does not need to turn away a risk just because it is outside of the company's capacity.

Facultative cover may also usually be used where the features of a risk are unusual or particularly hazardous. For example, an insurer can seek guidance from a global reinsurer on the terms to offer for a risk with which they are not familiar. There may also be political pressures on an insurer to accept a risk that it otherwise would not choose to take, e.g. a major government project. Facultative reinsurance allows it to accept such a risk whilst minimising the potential impact on its results should a loss occur.

Catastrophe bonds

These may be considered appropriate for some elements of the portfolio. These are a form of alternative risk transfer (ART), whereby risk is transferred to the capital markets rather than to another insurer or reinsurer (CII study text, M97 Reinsurance, 2016, P2/11). Catastrophe bonds serve a similar function to catastrophe reinsurance. Where an insurer is exposed to a low probability of potential high severity losses, these can help ensure they remain solvent in the event of a major event. This could involve a major natural disaster such as an earthquake or hurricane, for example, where a large number of individual risks (e.g. properties, planes, or boats) could all be damaged or destroyed by the same event.

These bonds offer high yields and are designed to attract investors on the open market with a high risk appetite. These can include hedge funds, pension funds and banks. The yield is the equivalent of the premium the insurer would pay to a reinsurer for catastrophe reinsurance.

If a major event does happen which causes losses over a pre-agreed level, the bondholders agree that the capital and/or interest associated with the bond can either be deferred, or written off entirely. The details vary bond by bond, but in any event this allows the insurer to write down the value of the liability in its books, releasing funds which can be used to pay claims.

In general, catastrophe bonds are used only for extreme catastrophic exposures since they are inflexible, expensive to create and often cover only a narrow range of perils.

Question 3 - Learning Outcome 5 (20 marks)

You are an outwards reinsurance technician for GHI plc, a non-life insurer. GHI plc have a portfolio of property risks situated in a country which is subject to hurricanes.

GHI plc has three outward reinsurance non-proportional treaties:

- Risk excess of loss for £250,000 excess of £50,000 with one reinstatement.
- A catastrophe excess of loss of £4,500,000 excess of £1,000,000.
- A stop loss of 45% excess of 105% annual gross net retained premium, subject to an aggregate limit of £600,000.

The annual gross written premium (GWP) for the property risks is £10,000,000. The reinsurance premiums are:

- Risk excess of loss: 2% of the GWP.
- Catastrophe excess of loss: 5% of the GWP.
- Stop loss: 5% of the gross net retained premium.

The following table shows the claims incurred by GHI plc, including those arising from Hurricane Diane and Hurricane Suzanne (note that no element of the hurricane losses are recoverable under the risk excess of loss treaty):

Risk	Nature of Loss (in loss date order)	Cost (£)
Risk 1	Theft	150,000
Risk 2	Fire	100,000
Risk 3	Hurricane Diane	750,000
Risk 4	Hurricane Suzanne	3,000,000
Risk 5	Fire	200,000
Risk 6	Theft	100,000

- (a) Calculate, **showing all of your workings**, the stop loss reinsurance premium. (5)
- (b) Calculate, **showing all of your workings**, the total reinsurance recoveries which will be made by GHI plc from the reinsurance treaties. (15)

Answer to Question 3 (Learning Outcome 5)

- (a) The stop loss premium is 5% of the gross net retained premium.

Gross written premium is £10million. Premiums for other reinsurance must be deducted from this to reach the gross net retained premium income (GNRPI).

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Risk XS loss premium = 2% of GWP = £10m x 0.02 = £200k.

Catastrophe XS loss premium = 5% of GWP = £10m x 0.05 = £500k.

£10m - £200k - £500k = £9.3m GNRPI.

£9.3m x 0.05 = £465k.

The stop loss premium is £465k.

(b) **Risk 1** – Excess is £50k.

£150k - £50k = £100k reinsurance recovery.

GHI pay £50k.

£100k of the reinstatement is used, leaving £150k.

Risk 2 – Excess is £50k.

£100k - £50k = £50k reinsurance recovery.

GHI pay £50k.

£50k of the reinstatement is used, leaving £100k.

Risk 3

Catastrophe excess is £1m, which exceeds the loss.

GHI pay £750k.

Risk 4

Catastrophe excess is £1m.

£3m - £1m = £2m reinsurance recovery.

GHI pay £1m.

Risk 5 – Excess is £50k.

$£200k - £50k = £150k$ reinsurance recovery.

GHI pay £50k.

The last £100k of the reinstatement is used and £200k of cover remains in total.

Risk 6 – Excess is £50k.

$£100k - £50k = £50k$ reinsurance recovery.

GHI pay £50k.

Total recovery from excess of loss treaty = £350k.

Total recovery from catastrophe excess of loss treaty = £2m.

GHI's total losses = £1.95m.

Excess is 105% of annual GNRPI = $£9.3m \times 1.05 = £9.765m$.

Losses are less than the excess so there is no recovery under the stop loss reinsurance policy.

Question 4 - Learning Outcome 6 (30 marks)

You are a reinsurance broker working for MAR Ltd, who specialise in the reinsurance placement of marine hull portfolios for insurance companies. One of your clients, an insurer who is risk averse and targets only low risk, high quality business, has asked you to review their reinsurance provision for their marine hull portfolio.

The portfolio has the following characteristics:

- It consists of a large number of hull risks with a range of sums insured.
 - There is a potential for a concentration of risk in a catastrophe exposed territory.
 - The portfolio comprises a number of different sub-classes, including pleasure craft with similar sums insured and larger commercial craft with a wide variation in value.
 - The claims experience has fluctuated widely over the last ten years.
- (a) Discuss the different reinsurance treaty options for this portfolio. (20)
- (b) Identify, with justification, which reinsurance treaty option would be the most appropriate for the insurer. (10)

Answer to Question 4 (Learning Outcome 6)

- (a) Due to the diverse nature of the risks and sums insured in a marine account, facultative reinsurance is more common in marine hull reinsurance. However, a variety of treaty options are available. The client should be sure to disclose the existence of any facultative reinsurance which might insure to a treaty reinsurer to ensure, not least because this may lower the required premiums.

Individual risks can be large and the client will need to consider reinsurance to cover these as well as cover against an aggregation of losses such as catastrophe reinsurance.

This client is risk averse and prefers low risk, high quality business. This will likely mean the vessels covered are suitable for seagoing service and have appropriate equipment. The client is unlikely to be happy with a quota share treaty in these circumstances. Such a treaty would usually entail them ceding a proportion of the premium equal to the proportion of risk reinsured on all of the vessels covered. However, if the risks are good the client will want to retain most (or all) of the premium on lower value vessels for their net account. (CII study text, M97 Reinsurance, 2016, P6/2)

Surplus treaties

A surplus treaty can address some of these issues. Here the client could choose a retention value and cede a proportion of risks to a reinsurer only if this is exceeded. This comes closer to addressing the fact that the main concern for the client will be especially large losses which could ruin the account very quickly. However, this is still not ideal. The client would still be paying premiums relating to the reinsurance of small losses occurring on any vessel whose total value exceeded the retention figure. This is because the reinsurer would contribute a proportion of payment on any claim arising from one of these risks. Surplus treaties can cause additional issues because large losses on individual hulls can cause problems relating to establishing and grading retentions.

Excess of loss treaties

A working excess of loss cover can provide some solutions since the distribution of liability between insurer and reinsurer are based on losses rather than sums insured. The client could utilize this, especially for their classes of business with larger risks, and where variations in value are large. However, these can meet with difficulties arising from the calculation of premiums according to the burning cost method.

Total loss only reinsurance

One of the client's main concerns will likely be large losses such as the total loss of a hull. These losses can equate to a large proportion of the total annual premium on their marine hull account, and could even exceed it. Total loss only (TLO) reinsurance (12A1B) can help to protect against this and provides a solution for problems which can exist with other potential treaty reinsurance solutions.

TLO reinsurance can be effected as a fac/oblig or treaty. The client would reinsure only the risk of a total loss. Any smaller losses, such as partial damage to a hull, would be retained by them. This is a risk they may be happy to take given the high quality risks on their account, and means reinsurance premiums would be lower. To prevent disagreements, sums insured would be an agreed value determined between the policyholder and insurer.

Pleasure craft

Some classes of business merit separate consideration. The pleasure craft the client insures have more consistently similar values and present different risks, in part because their owners and operators have less experience. In terms of the hulls alone, the values can be very high and top end vessels can exceed the total annual premiums received in that account. Collision liability will likely be included in the hull account and claims on this can greatly exceed the value of the insured vessel.

If liability cover is included, it may be prudent to reinsure the pleasure craft/yacht subclass separately. Here the main concern is not a total loss of the vessel, but instead a large liability claim. An excess of loss treaty may be appropriate, with an excess set at a level the client is comfortable with.

Catastrophe/aggregate reinsurance

None of this deals with the potential for aggregations of losses. Any type of vessel, but especially pleasure craft, can be moored together in large numbers. Yachts are especially likely to be involved in one fire, storm or other natural disaster, but commercial vessels can also be involved in accumulated losses, either if they collide with one another or are caught up in the same event, such as a large storm. The move towards a smaller number of very large ports increases the chances of two or more vessels being near to one another.

The potential concentration of risk in catastrophe exposed territory, such a yacht in the Caribbean during Atlantic hurricane season, suggests the client should invest in catastrophe reinsurance, if they have not already done so. This would entail a 'per event', catastrophe excess of loss cover where losses from the same source are aggregated and a reinsurer contributes if the total exceeds a pre-agreed limit (up to a maximum agreed value). Since the client is noted to be risk averse, it may be best for them to purchase this cover with a relatively low excess though they must be careful not to choose such a low excess that the reinsurer applies prohibitively high premiums.

Stop loss reinsurance

Finally, the claims experience has fluctuated widely in the last ten years. It is not clear how bad the worst of these years are, but it is possible that the account has suffered losses over this period. To some extent the client will have the experience to know that losses will be offset by good future years, however this fluctuation does not make for a healthy cashflow. Instead they could consider stop loss reinsurance.

This would entail a reinsurer agreeing to cover any losses in excess of an agreed level, measured based on losses after all other reinsurance recoveries, and based on all written premiums minus those which are used to pay for other reinsurance. Effectively such a treaty would smooth the client's results and cap any losses for a given year at a low level.

This would not likely be available for long-tail business such as liability and so may be hard to obtain if liability cover is included within the hull account.

(b) **Recommendation**

To cover individual losses, the insurer would benefit from TLO reinsurance since the loss of a vessel can lead to significant losses. Some form of surplus or excess of loss treaty will be required if liabilities are covered as these could be just as large and would not be covered by a TLO cover. Any excess or retention can be set at whatever level of loss the client is happy to sustain. WXL/E would be preferable to surplus to avoid the reinsurer having a share in small losses on good risks.

Catastrophe excess of loss cover would be appropriate given the exposure pattern here and without this the insurer risks insolvency since the individual reinsurance may well have limits on the number of reinstatements.

A stop loss cover could help to smooth the fluctuating results if such a cover can be found.

Question 5 - Learning Outcomes 7 and 8 (10 marks)

You are a reinsurance underwriter working for a UK-based reinsurer DJT Ltd, specialising in employer's liability. You are concerned that the underwriting results for the proportional and non-proportional reinsurance portfolios in the last financial year were much worse than expected.

A detailed analysis has highlighted that some claims have not been notified within a reasonable reporting period and the information provided is often insufficient to allow effective reserving and effective pro-active claims handling which has affected profitability.

Identify, with justification, **two** reinsurance contract wording clauses that might improve the future effectiveness of claims reserving. (10)

Answer to Question 5 (Learning Outcomes 7 and 8)

Notification of claims (or loss) clause

This clause states what information should be given to the reinsurer and when it requires this information. This could be used to make high quality and timely information a central commitment of the cedant as part of the reinsurance treaty. It is an effective way of protecting a reinsurer against losses resulting from poor or late information since the clause can be highly prescriptive and stipulate that recovery may be compromised if the terms are breached. There can also be a time period in which the claim has to be notified from the client being aware which puts extra pressure on the client to perform. (CII study text, M97 Reinsurance, 2016, P7/36)

In this example, a clause may demand that a ceding insurer notifies the reinsurer as soon as they reasonably can after they become aware of a claim which may impact the treaty, and it may detail the precise detail of what information will be required. It may also demand that the reinsurer be kept updated at every stage once a claim has been notified.

This will assist the reinsurer in reserving appropriately, which is the main issue here. It is found in non-proportional treaties, and in this context has a similar function to a claims information clause which might be found on proportional treaties.

Access to records clause

Where trust between cedant and reinsurer is low and there is a history of a cedant providing substandard information, the reinsurer may prefer to check the details for themselves. This clause provides the reinsurer with a right to inspect the records of the insured which pertain to the relevant treaty (CII study text, M97 Reinsurance, 2016, P7/18).

Doing so would be at the cost of the reinsurer. At its simplest it may involve claims handlers visiting the cedant to conduct an audit, however outside experts may need to be employed if the reinsurer does not have the expertise or capacity to perform this. Nonetheless if the reinsurer is suffering losses relating to poor, or delayed, information, then this may well be worth their while.

This allows the reinsurer to satisfy itself that all aspects of the treaty (e.g. a notification of claims clause) are being adhered to properly. In this way they can be more confident that reserves are adequate.

Question 6 - Learning Outcome 9 (20 marks)

You are the underwriter for a reinsurer HDR Ltd, who specialise in motor insurance. You are concerned about the affect of a changing market cycle might have on the profitability of the motor reinsurance portfolio.

- (a) Identify, with justification, **two** of the most significant reasons for any change in the underwriting cycle for motor reinsurance. (10)
- (b) Explain in detail **two** ways to manage the underwriting cycle to maximise a technical profit for motor reinsurance. (10)

Answer to Question 6 (Learning Outcome 9)

(a) **High claim levels create a hard market**

High levels of claims can have a direct impact on the reinsurance market. Developments in the market which are associated with increasing losses can lead to a hard market. In motor insurance, one example of this is a greater number of liability claims, and greater court awards per claim.

The increase in the number and size of claims, especially if similar changes are echoed in other market in the world, can lead the worldwide reinsurance market to suffer losses. This would especially be if they had not purchased sufficient retrocession which might leave the reinsurers open to significant losses on their own accounts.

In motor insurance, recent developments involving high numbers of whiplash claims could be a precursor for a hard market.

This can lead to some reinsurers reducing the capacity they offer to this class of business, or perhaps withdrawing it altogether. Those who are left can negotiate favourable terms in the subsequent hard market.

In contrast, a period of lower claim activity can lead to a softening of the market. Loss experiences are no longer high enough to justify charging high premium rates and insurers (and their brokers) can shop around for better terms and rates. Reinsurers sense this and respond by relaxing terms (CII study text, M97 Reinsurance, 2016, P9/23).

The effect of changes in the retrocession market

The first tier reinsurance market is often guided by changes in the retrocession market. The amount of capacity a reinsurer can offer to cedants is affected by the amount and scope of any cover it can obtain from its retrocessionaires.

If retrocessionaires impose limits on the amount of coverage, or the number of reinstatements, available, then reinsurers must choose to either reduce the scope of cover they offer or accept more risk themselves. For example, the increase in motor liability claims could cause retrocessionaires to limit policies to one reinstatement to protect their own accounts. This could cause a reduction in reinsurance capacity in the market as reinsurers reduce their cover in response.

(b) **Actively manage the portfolio**

As the market softens a reinsurer can be put under pressure to offer more relaxed terms. This may include lower premiums, fewer exclusions or more reinstatements.

However, an underwriter must ensure they maintain standards which continue to adhere to high standards of risk selection. If they fail to do so the account could incur

losses when more losses occur in future years. The underwriter should consider risks in the context of the entire portfolio (CII study text, M97 Reinsurance, 2016, P9/16).

For example, in a softening market, ceding insurers will be aware that there is a lot of capacity in the market and may demand favourable terms such as more reinstatements on treaty cover. A reinsurance underwriter must know when to walk away if the cedant is demanding terms which will be unprofitable, in their professional judgment.

At the same time, the reinsurer should aim to maintain good business relations with their clients, which can be a challenge when they are not able to agree to all of their demands. However, strong relationships can mean the reinsurer retains more business during a softening market as clients may value the fact they can trust a particular reinsurance office even if they cannot provide the most favourable terms at that time.

Underwriting for technical profit not investment income

An underwriter must make their decisions on what cover to offer, and on which terms, whilst prioritising the underwriting result on the account. Therefore, a motor reinsurer should resist the temptation to soften the terms they offer beyond the point at which they feel the business will generate an acceptable underwriting profit (CII study text, M97 Reinsurance, 2016, P9/26).

Historically, there have been long periods when significant profits could be obtained from asset management operations. An underwriter might accept business which was thought to be relatively poor and which might make an underwriting loss, but would accept this because the premium could be invested for a profit which would more than offset any losses.

The focus should instead be on correct risk selection, strictly controlling expenses and on ensuring underwriting strategies across all lines of business complement one another. Thus a motor reinsurer should concentrate on ensuring they have a good balance of 'own damage' to liability cover, for example, and that they offer cover only to better risks rather than being tempted to accept all risks in the hope the premiums can create a large investment profit.

Of course the money markets are volatile and currently investment returns are relatively poor. An underwriter relying on investment returns for a profitable account could find their account suffering severe losses. As a result it is wise to incentivise underwriters to consider only the underwriting result and to manage the assets separately to try to maximise returns.

Question 7 - Learning Outcome 10 (30 marks)

You are a reinsurance broker working for ABB Ltd, a London market broker. A client, who currently only underwrites products liability insurance and for whom you place their products liability reinsurance programme, is considering entering the aviation hull underwriting market.

As part of your client's review of the aviation hull underwriting market, they have asked you to explain the difference between the approaches to the reinsurance of products liability and aviation hull portfolios.

- (a) Explain, with justification, the **two** most significant differences in the reinsurance underwriting considerations for the reinsurance of the products liability and an aviation hull portfolio. (8)
- (b) Explain, with justification, **two** differences in the reinsurance methods for reinsuring products liability and aviation hull portfolios. (12)
- (c) Explain, with justification, **two** significant differences in the main terms and conditions which might be applied to the reinsurance contract of products liability and aviation hull portfolios. (10)

Answer to Question 7 (Learning Outcome 10)

(a) **Products liability**

The reinsured would usually be asked specifically what their exposure to the North American market was, due to the litigious culture there and the higher potential awards from the courts. Therefore, the proportion of the underlying account exposed to these markets is a major consideration for an underwriter (CII study text, M97 Reinsurance, 2016, P11/21).

Policies will usually be written on a claims made basis. This limits the exposure of the reinsurer in respect of liability arising from high risk products and allows them to better gauge the performance of the account. Some liability claims arise many years later, e.g. for the drug Thalidomide, and it is preferable for a reinsurer to gain quicker certainty that their own liability has ended.

It is important to understand whether cover is being provided on an aggregate basis and for the cedant to confirm the maximum and average limit of any acceptance in the aggregate. Products liability is defined more often by a series of losses caused by the same product rather than a single large loss (which is more of a concern on aviation hull accounts). An aggregate limit provides a maximum amount, which could be paid out regardless of the number of claims made and is vital for a reinsurer to understand their maximum potential losses, and whether they require retrocession coverage.

Specific features of coverage which might be provided by the ceding insurer include defective design coverage. It is also important to confirm whether products guarantee and products recall are excluded from original policies.

Aviation hull

Some major considerations here are naturally very different. Alongside basic information such as the insured value of the aircraft, claims experience, and the scope of cover offered, the reinsurer will want details of the types of flying which are undertaken, and of the experience of the insured airlines/pilots. This information helps a reinsurer to understand the composition of the underlying account.

Most excess of loss covers will be provided on a per event basis rather than an aggregate basis which is more favoured in products liability. This is due to the different loss patterns. Aviation hull losses are fewer and larger in number, and tend not to accumulate in large numbers.

For excess of loss programmes, details will also be required of the reinsured's retention per aircraft and the threat of potential accumulations as a result of shares accepted from various sources. Actual accumulations of risk are much rarer in aviation hull insurance since most accidents involve one, or rarely two, aircraft. It is therefore more likely that an accumulation will occur of shares in an individual aircraft.

Some deals will be effectively struck directly between the owners of large fleets of aircraft and reinsurers, via a captive insurer. Here the main consideration will be the (usually very high) excess. This should be so high that the owners virtually act as their own insurer, and only really have catastrophe cover. The reinsurer should ensure they are satisfied that losses to the treaty are unlikely before offering a correspondingly low premium. Self-insurance in this manner is increasingly common in aviation whereas this is less likely in products liability accounts.

Reinsurers should also understand the nature and size of any no claims bonus which might exist as this is a common feature of coverage, and the low numbers of claims mean there is a significant chance that this clause will be activated (CII study text, M97 Reinsurance, 2016, P12/3).

(b) Products liability

The company in the example is unusual in underwriting only products liability insurance. Usually this is integrated into a general liability account, though this class may have a different sub limit applied.

Some business is placed facultatively. This would be more likely if the underlying company concerned was large and/or the goods being insured were especially unusual or contentious. This class of business does not usually feature large numbers of homogenous risks and is therefore more suitable to individual consideration of each

risk. This is especially the case because losses can be high and it takes a skilled underwriter to identify potential areas where losses might occur.

Occasionally, standalone reinsurance is purchased for products liability. When this occurs it is most often on an excess of loss basis. The focus is usually on protecting against especially large losses since these can be very high, and excess of loss allows for this whilst guaranteeing that a cedant retains all of the premiums pertaining to the lower levels of risk with which they are comfortable.

The fact that each underlying policy can cover products which are so variable mean that a proportional treaty is not appropriate.

Aviation hull

Facultative cover is also prevalent in this class of business. The quality of business that might be ceded to a treaty can vary greatly depending on the territories and types of aircraft involved. A reinsurer will often start trading with an insurer on a facultative basis in order to build a relationship, whilst ensuring they can examine every piece of business in the early stages. If the business proves fruitful then a treaty may follow.

Surplus treaties are unsuitable because the values of the underlying aircraft differ so greatly. A single cession amount for the whole fleet would be impractical. The administrative burden of having a cession rate for each aircraft is too high. Usually airline policies show only a total premium for the entire fleet.

Unlike products liability, proportional reinsurance in the form of quota share treaties are used. Different treaty limits are applied to various types of business covered under the treaty. Sometimes there may be a range of cessions between a lower and upper limit and the business will be ceded at the discretion of the insurer. The wider the variability the more trust must exist between the parties as the insurer has the power to cede greater proportions of poor quality business.

(c) Products liability

Products liability policies contain an annual aggregate limit in part to counter the threat of a very large series of connected claims relating to a deficient product, such as a pharmaceutical product.

Frequently, there is an exclusion on products recall (CII study text on M97 Reinsurance, 2016). This is because there is a large element of potential moral hazard. The insured could recall a product on the slightest grounds, e.g. for public relations purposes, and this removes the element of fortuity necessary in insurance. It is not really liability insurance at all.

Products guarantee is also frequently excluded. No damage or injury has to occur under this, and the product would simply need to perform poorer than it claimed it would. It can experience runaway claims as one issue can affect all products in the same line, and is not really liability insurance, hence the exclusion.

Efficacy is also usually excluded. It doesn't require bodily injury or property damage and simply relates to a product failing to perform its job.

Pure financial loss is excluded because the purpose of this class of business is to indemnify third parties for injury, physical loss or damage caused by a product. This would extend the scope of cover unreasonably and all sorts of unforeseeable economic losses could end up being covered.

Aviation hull

Most cedants prefer to insure on an agreed value basis, especially where the relevant aircraft are mortgaged. This is because the mortgagor may demand an amount of insurance equal to the value of the aircraft at the time of the mortgage. Policies are often endorsed to show that the amount that will be paid in the event of a total loss is the value stated in the policy and that this has been agreed in advance. AVN 621 is the standard market clause. This is more likely to be applied if the aircraft is newer and still in demand as the market value will not likely fall very fast. Reinsurers often impose AVN 41A for facultative placements (CII study text, M97 Reinsurance, 2016, P12/16). This is an aviation-specific version of the claims control clause allowing a reinsurer to control claims rather than trust the cedant to do so. A reinsurer can also discover the original policy premiums by using this clause and cedants are frequently reluctant to have this imposed on them.

Agreed values are harder to establish as aircraft become older and market values decline. Costs of repairs will rise as a proportion of the total insured value as the insured value falls. The cost of a repair is usually the same, regardless of the value of the aircraft. This means total losses are more likely where an aircraft's value has dropped and the sum insured is lower. A component parts clause (AVN 4) (CII study text, M97 Reinsurance, 2016, P12/15) used to be used commonly to lay down a percentage of the value that could be expended on a major part of the aircraft. However, this is used much less frequently now as aircraft owners can often find their insurance payment falls far short of the repair costs. The clause is mostly limited to vintage aircraft and those made in Eastern Europe. It is also common to apply AVN 64A or AVN 64B (CII study text, M97 Reinsurance, 2016, P12/17).

These are standard market clauses detailing the rebate a cedant will be paid in the event that there are no claims.

Question 8 - Across more than one Learning Outcome (30 marks)

You are a reinsurance broker, employed by FEM Ltd, a global insurance broking company. One of your clients, a non-life insurer, with an annual gross written premium of £200 million, has asked you to review its outwards reinsurance programme ahead of its renewal. The reinsurance market cycle is hardening and capacity is becoming scarce.

The insurer's current reinsurance structure is on an excess of loss treaty basis as follows:

- Layer One: £6 million excess of £4 million with one reinstatement.
- Layer Two: £12 million excess of £10 million.
- Layer Three: £100 million in excess of £22 million.

Losses in excess of 50% of the current reinsurance structure deductible are shown below:

Loss 1	£11.0 million
Loss 2	£10.0 million
Loss 3	£2.3 million
Loss 4	£3.5 million
Loss 5	£15.0 million

- (a) Calculate, **showing all your workings**, the reinsurance recovery for **each** of the **five** losses shown in the table above. (10)
- (b) Explain the suitability of the current reinsurance structure in light of the reinsurance recoveries you have calculated above. (8)
- (c) Recommend with reasons, **three** changes you would make to the expiring programme, including in your answer the cost implications for the insurer. (12)

Answer to Question 8 (Across more than one Learning Outcome)

- (a) Firstly, the reinsurance recoveries are as follows:

Loss 1 - £4m excess, £7m above this.

Layer 1 pays £6m (and is fully reinstated, leaving no further reinstatement available).

Layer 2 pays the remaining £1m.

Loss 2 - £4m excess, 6m above this.

Layer 1 pays £6m and is completely exhausted, with no further reinstatement possible.

Loss 3 – Below the excess, so the insurer pays £2.3m in full.

Loss 4 – Below the excess, so the insurer pays £3.5m in full.

Loss 5 - £4m excess. The next £6m cannot be paid by Layer 1 since it is exhausted so the insurer pays £10m.

Layer 2 pays the remaining £5m.

Layer 3 is not used for any loss.

In summary:

The insurer pays £23.8m in total.

Layer 1 pays its maximum £12m.

Layer 2 pays £6m.

Layer 3 pays nothing.

- (b) The current programme suggests the insurer is willing to retain up to £4m and as such Losses 1 and 2 are adequately covered by the treaty.

Losses 3 and 4 highlight the fact that fairly significant losses can occur which will not receive any reinsurance support. The company must decide if they are happy with the number and volume of these. Here there are only two losses in excess of 50% of the deductible (i.e. £2m) compared to £200m annual GWP. It may be that claims experience suggests there are consistently only a small number of such claims and that the company prefers to retain the risks because they are profitable overall. However, they could consider ceding a proportion of all risks via a proportional treaty if losses on these small-but-frequent claims are too high.

Loss 5 highlights the fact that Layer One can provide inadequate protection. Here the company has been forced to pay more than twice their chosen deductible because they have run out of reinstatements.

The fact Layer 3 was not called into action may not be a concern. If the premiums for it are sufficiently low and/or the threat of a claims of many tens of millions is appreciable, then this could provide an adequate safety net. One claim of £100m would knock out half of the annual GWP and could ruin the account for that year.

However, if claims of that size are not considered likely the insurer could consider reducing this layer of protection to save on premiums.

- (c) 1 - If the year in question is normal, then Layer 1 is a working layer which can have multiple losses on it in one year. The limitation of having only one reinstatement is risky because at present the insurer has no back-up plan and would currently have to pay any benefit between £4m and £10m itself on the third claim and on all subsequent claims. It would be beneficial to obtain cover with more reinstatement, or ideally with unlimited reinstatements.

Such a change opens up a reinsurer to the possibility of paying significantly more claims and, especially in a hardening market, the costs could be substantially higher. Nonetheless the insurer should consider whether this might be worthwhile. They could raise their individual retention level and/or consider buying proportional reinsurance for the losses below the deductible to keep these costs down.

2 – As mentioned above, the insurer could obtain some form of cover for losses up to £4m in the form of a proportional treaty. This could be a quota share where an equal proportion of all losses are ceded to the reinsurer, or a surplus treaty if the insurer prefers to retain 100% of smaller risks, e.g. £1m gross retention with 3 lines of £1m surplus cover, sitting below the current Layer One.

This would stop the insurer from facing the full brunt of all claims under £4m. The more such claims they receive each year, the more suitable such a cover would be. We do not know the volume of the smaller claims which are each less than £2m. If there are not many then overall this is a very profitable account, but potentially there could be many attritional claims in this range and the book of business may be less profitable.

Obviously buying proportional cover would come at the cost of premiums, ceded to a reinsurer in proportion to the risk ceded. However, the benefit to the insurer may outweigh this if their results are sufficiently smoothed, and their claims outlays sufficiently reduced that they can increase their capacity and attract more business, for example. They may also be able to share the cost of the excess of loss layers with a quota share reinsurer if cover is purchased for the common account.

3 – The most fundamental feature of excess of loss coverage is the deductible selected, which is £4m here. The losses here only amount to £41.8m versus GWP of £200m. The implication is that there are a great many smaller losses if this company has a fairly normal profit margin.

So far we have added a proportionate treaty to spread some of the burden of paying these claims, which are not currently reinsured at all, and provided for more reinstatements on the 'working' layer (Layer One). Both of these will cost more anyway, and all the more so in a hardening market.

This appears to be a large, strong company (judging by their high chosen deductible). To counteract the extra costs, this deductible could be raised, either 'squeezing' Layer One or retaining its £6m of cover but moving it all upwards (and moving the other

layers up in line with this). Although, with this loss profile it is unlikely that a recommendation would be made to increase the deductible to this level. A deductible of £6m would mean a smaller number of claims required reinsurer support and those that did would tend to be cheaper for the reinsurer. This would reduce the premium for any layer which was either reduced in scope or whose deductible was raised and much of the extra risk would be covered by the introduction of the proportionate reinsurance for the lower sums insured.

Question 9 - Across more than one Learning Outcome (20 marks)

LMO plc, a reinsurance company, directly accepted a share of PQR plc insurance company's whole account quota share treaty. The treaty wording stated that the treaty accepted 'All business accepted by the insured'.

LMO plc and PQR plc now dispute the width and intention of the treaty wording based on the principle of *contra proferentem*. In addition, LMO plc has recently had their credit rating downgraded and the relationship between the two companies has broken down.

- (a) Explain briefly **two** ways in which the ambiguity in the wording of this treaty can be resolved taking into account the principle of *contra proferentem*. (8)
- (b) Identify, with justification, **three** key services offered by a reinsurance broker which may have avoided the breakdown in the relationship between LMO plc and PQR plc. (12)

Answer to Question 9 (Across more than one Learning Outcome)

- (a) *Contra proferentem* is a doctrine used by the courts to resolve contract ambiguity (CII study text, M97 Reinsurance, 2016, P8/11). In general, where it is reasonable to read more than one meaning into the words of the contract it will be construed against the party that drafted the relevant clause. Usually the drafter of the contract is the reinsured, or its broker. Therefore, one possible outcome is that LMO's reading of the contract will be deemed reasonable and the court would rule that the contract's breadth is as they suggest.

However, it is possible that although PQR plc (PQR) likely drafted the contract, the wording in question may have been adopted following an amendment proposed by LMO plc (LMO). If the origin of the ambiguity is in this amendment, then *contra proferentem* could operate in the opposite direction. The origin of the ambiguity determines against whom the court will likely find.

Any use of a standard reinsurance clause could complicate matters further, since these are inserted wholesale into contracts and are not really 'drafted' by the

reinsured, even if they form part of a contract which is put together by, or on behalf of, the reinsurer. *Gan Insurance v Tai Ping Insurance (No.2)* (2001) (CII study text, M97 Reinsurance, 2016, P8/11) suggests *contra proferentem* ought not to apply at all in these circumstances

(b) **Provide documentary services, including contract wordings**

The broker will usually be involved during the placement of the business, when the contract terms are being agreed. They may well have drafted the terms themselves.

Bearing in mind the courts' tendency to find against those who draft the wording in the event of ambiguity, it is vital that the contract very clearly spells out the scope of the cover and that both parties have certainty of contract.

A broker therefore could have more clearly documented the intended scope of cover, and given LMO an opportunity to propose an amendment if they felt this was unreasonable during the preparation of the contract.

Check security offered by reinsurers

Secondly, although the choice of reinsurer is for the ceding insurer to make, a broker will usually rate reinsurers. They will do so based on a large number of factors but chief among these will be financial strength, since the insurer is relying on the reinsurer's ability to pay in the event of a qualifying claim. A broker is therefore usually considered a quality source of information about the ability or willingness of a reinsurer to pay claims and usually have an obligation to place business with reinsurers which are not a solvency risk.

LMO's recent downgrade will be a concern for PQR. In theory a broker may have been able to anticipate this downgrade if they were aware of any issues LMO were facing. This could have led to the business being placed elsewhere, avoiding the current situation.

Prepare and collect claims

Finally, a broker should manage the ongoing relationship between the two companies. This can include preparation and collection of claims whereby the broker acts as an intermediary during the claims process. The current breakdown in the relationship seems to be caused at least in part by issues with claims negotiation.

Skillful management of this relationship could have helped prevent the current situation. Proactive management of this situation might have led to a resolution whilst the companies remained on good terms.

Question 10 - Across more than one Learning Outcome (10 marks)

You work for a UK-based insurer XYZ Ltd, who specialist in property risks. The reinsurance contract you currently place with a UK-based reinsurer is due to expire shortly. You understand that due to capacity restrictions the reinsurance premium is going to increase considerably. Your reinsurance broker has suggested there may be advantages and disadvantages in approaching reinsurance markets outside the UK.

Explain **five** significant advantages and **five** significant disadvantages of keeping your reinsurance contract in the UK as opposed to moving this to an overseas market. You will be using the same reinsurance broker. (10)

Answer to Question 10 (Across more than one Learning Outcome)

Advantages of keeping the contract in the UK

- The UK market operates in a stable legal and regulatory environment. Regulations ensure solvency of authorized companies but are not so onerous as to stifle innovation.
- The law of England and Wales will apply. This has a vast body of relevant case law to draw on in the event of a dispute and pursuing legal action would be cheaper since there would be no need to retain a second set of lawyers in the territory of the reinsurer.
- UK reinsurers will have a detailed understanding of the UK property market and even in an electronic age there are benefits of a reinsurer being local; they will speak English and their office opening hours will coincide with the insurer's allowing for more instant communication.
- There will be no need to forge an entirely new relationship with a reinsurer whilst also getting to grips with potentially different practices that may be in place overseas.
- The London Market Reforms in 1999 standardised a good deal of the placement of business, simplifying the process for insurers and adding much greater contract certainty. In particular, the complete and final agreement of all terms must be present when the contract is agreed, with documentation delivered promptly thereafter (CII study text, M97 Reinsurance, 2016, P9/10).

Disadvantages of keeping the contract in the UK

- In the example, the UK market is experiencing capacity restrictions and there is a hard market. This will not necessarily be the case in all markets, for example if the UK hard market was caused by losses which were felt especially keenly in that market.

- As a result, the insurer may be able to make considerable savings by looking to an overseas market, at least until the UK market softens.
- During a hard market there are often innovative and competitive new entrants to the market. For example, the prominence of the Bermudian market rose as other more traditional markets had minimal capacity. Insurers could save on premiums whilst compromising very little stability and security by purchasing in this market.
- The European market includes some of the largest, most diverse reinsurance specialists, including Swiss Re and Munich Re, who can offer an enormous breadth of experience in many different markets, which is expertise the insurer could draw on if needed during a claim.
- Many of the historical disadvantages of using a foreign reinsurer have lessened or disappeared. Electronic communications mean that it is possible to communicate instantly at any time when office opening hours overlap. Many reinsurers from overseas have a branch office in the UK anyway, and English is a common language of business in much of the world.

Reference list

CII study text, M97 Reinsurance, 2016

Question deconstruction and answer planning

The following three plans are based on 10, 20 and 30 mark questions respectively.

Question 1 - Learning Outcomes 1, 2 and 3 (10 marks)

EDP plc is an established property reinsurer which has traded successfully for many years. EDP plc is approached by KPY plc, a newly created property insurer, who will commence trading in a few months time.

Explain, with justification, the **two** most significant considerations which EDP plc will need to take into account in deciding whether to reinsure KPY plc. (10)

Question deconstruction

- Review learning outcomes 1, 2 and 3 in the course material and the relevant information in the study text. Your answer should only draw on learning from these sections and the corresponding chapters.
- Highlight the instructions within the question (which are circled in red above).
- What is the context? EDP plc is an established property reinsurer. KPY is a new property insurer. These facts are important.
- The question asks for an explanation and a justification of two important considerations. The considerations you choose must be justifiable as important within the context. Equal weighting should be given to each explanation and justification as five marks will be available for each within the total of ten.

Answer plan

- Identify the first consideration and provide a justification for why it would be important within this context. Then explain it. Do the same for the second consideration.
- Remember that you must relate your selection of the consideration to the context of this question. You must be able to justify why they are important as well as explain them.
- As this is a 10 mark question, your answer should be shorter than the answers to either a 20 or 30 mark question.

Question 6 - Learning Outcome 9 (20 marks)

You are the underwriter for a reinsurer HDR Ltd, who specialise in motor insurance. You are concerned about the affect of a changing market cycle might have on the profitability of the motor reinsurance portfolio.

- (a) Identify, with justification, **two** of the most significant reasons for any change in the underwriting cycle for motor reinsurance. (10)
- (b) Explain in detail **two** ways to manage the underwriting cycle to maximise a technical profit for motor reinsurance. (10)

Question deconstruction

- Review learning outcome 9 in the course material and the relevant information in the study text.
- Highlight the instructions within the question (which are circled in red above).
- Consider the context. You are an underwriter and should construct your answer from this perspective. This is not just about a change in the market cycle, it is about the effect on the profitability of the motor account caused by a change in the market cycle.
- The marks in part (a) are equally weighted so spend an equal amount of time and effort in identifying and justifying each of the **two** most important reasons.
- The 10 marks in part (b) are also equally weighted and you need to explain in detail two ways to manage the cycle, spending an equal amount of effort on each. Your answer to both (a) and (b) should be similar in length as equal marks are available for each.

Answer plan

Part (a): You need to **identify** with **justification** two of the most important reasons. Taking each reason at a time:

- Identify the reason.
- Justify why you have selected it.

Part (b): Requires a detailed explanation of two ways to manage the underwriting cycle in order to maximise technical profit for motor reinsurance. Make sure you answer the question within the context.

As this is a 20 mark question, your answer should be longer than the answer to a 10 mark question but shorter than the answer to a 30 mark question.

Question 4 - Learning Outcome 6 (30 marks)

You are a reinsurance broker working for MAR Ltd, who specialise in the reinsurance placement of marine hull portfolios for insurance companies. One of your clients, an insurer who is risk averse and targets only low risk, high quality business, has asked you to review their reinsurance provision for their marine hull portfolio.

The portfolio has the following characteristics:

- It consists of a large number of hull risks with a range of sums insured.
- There is a potential for a concentration of risk in a catastrophe exposed territory.
- The portfolio comprises a number of different sub-classes, including pleasure craft with similar sums insured and larger commercial craft with a wide variation in value.
- The claims experience has fluctuated widely over the last ten years.

(a) Discuss the different reinsurance treaty options for this portfolio. (20)

(b) Identify, with justification, which reinsurance treaty option would be the most appropriate for the insurer. (10)

Question deconstruction

- Review learning outcome 6 in the course material and the relevant information in the study text.
- Highlight the instructions within the question (which are circled in red above).
- Consider the context. You are a specialist reinsurance broker. One of your clients has specific demands and needs and their portfolio has specific characteristics.
- The marks in part (a) require that you spend an equal amount of time and effort in discussing each of the different options.
- The 10 marks in part (b) require that you need to justify which treaty option is the most appropriate. Your answer to part (a) should be twice the length of part (b) to reflect the 20:10 allocation of marks.

Answer plan

Part (a): It is important to answer the question with reference to the context and to discuss each of the reinsurance treaty options you would consider in this context.

Part (b): Requires you to identify and justify the most appropriate reinsurance treaty option. Make sure you answer the question within the context.

As this is a 30 mark question, your answer should be longer than the answers to 10 and 20 mark questions.

Glossary of key words

Analyse

Find the relevant facts and examine these in depth. Examine the relationship between various facts and make conclusions or recommendations.

Describe

Give an account in words of (someone or something) including all relevant, characteristics, qualities or events.

Discuss

To consider something in detail; examining the different ideas and opinions about something, for example to weigh up alternative views.

Explain

To make something clear and easy to understand with reasoning and/or justification.

Identify

Recognise and name.

Justify

Support an argument or conclusion. Prove or show grounds for a decision.

Recommend with reasons

Provide reasons in favour.

State

Express main points in brief, clear form.