M80 SPECIMEN COURSEWORK QUESTIONS AND ANSWERS

Coursework – assignment

Submission Rules

Before commencing work you need to fully familiarise yourself with the Mixed assessment candidate guidelines, including:

- A coursework assignment should be between 5,000 and 10,000 words in total, depending on your writing style.
- Font type and size to be used in your assignment (Arial – size 11).
- Rules relating to referencing third party work.
- Penalties for contravention of the rules relating to plagiarism and collaboration.
- Deadline for the submission of a coursework assignment (i.e. within 6 months from the enrolment date).

Important notes

- Make sure you read each question carefully – marks will not be awarded for irrelevant material.
- Check the number of marks allocated to each question and ensure that your answer is sufficient in length and breadth.
- This assignment consists of 10 questions which range between 10 and 30 marks.
- Questions 1 to 7 follow the syllabus learning outcomes in order.
- Questions 8, 9 and 10 cover a number of syllabus learning outcomes.
- The total marks available are 200. You need to obtain 120 marks to pass this assignment.
- There is not always a single correct answer for a question and marks will be awarded for all valid responses.

Question 1 – Learning Outcome 1 (10 marks)

KB plc, a UK-based insurer, provides a wide range of personal lines products to UK-based customers.

Following a recent customer survey, it has become apparent that some customers do not fully understand the cover they have purchased. In the feedback provided by customers, they have also pointed out that they find some of the products very complex. Consumer outcomes are defined by the Financial Conduct Authority (FCA) as important and they have specified standards.

(a) Identify **five** key actions that could be taken by KB plc to improve customer outcomes. (5)

(b) Explain briefly how these **five** actions relate to the FCA's consumer outcomes. (5)

Answer to Question 1 (Learning Outcome 1)

(a) In terms of KB plc (KB), customer outcomes are the perceptions of their customers during and after their insurance purchase. Five key actions that could be taken to improve customer outcomes include:

- **Review the product range**. Review the products on offer to see whether they are overly complex in comparison to the customers' demand and needs. In particular, there should be a focus on the customers who have commented on the survey that they feel the products are complex.
- **Review staff training and competency (TC)**. Conduct a review of the account handlers dealing with the clients to ensure they understand the products themselves and are able to match customer requirements with the appropriate products.
- **Review Product Information**. The product information we send out to clients in their policy documentation should be clear and easy to understand.
- **Emphasise fair treatment of clients**. Fair treatment of clients may already be embedded in our culture, but this must be communicated to our clients so they too are confident that they will be treated fairly.
- **Review the post-sale process.** KB must ensure they do not have any unreasonable barriers preventing customers from changing products or even switching to another provider. (5)

(b) The FCA has three outcomes to which all regulated firms must work towards. These are summarised below:

- All consumers should be sold products which meet their needs and they should be provided by firms they can trust.
- Markets should be stable and transparent on pricing information.
- Firms should compete effectively in their market whilst the interests of their customers are at the heart of everything they do.

From these outcomes it can be seen that the regulator places huge emphasis on the customer. To that end, the FCA has continued to follow the previous regulator's theme of Treating

Customers Fairly (TCF). In order to provide the insurance industry with guidance as to how it could achieve and evidence TCF, a document named 'Treating Customers Fairly – towards fair outcomes for consumers, was published in 2006. The document identified six consumer outcomes.

The actions listed above are all aimed in some way at meeting these six different outcomes. For example:

- Reviewing the product range aims to meet the FCA's consumer outcome 2 (products and services sold are designed to meet the needs of consumers) and outcome 5 (consumers are provided with products that perform as they have been led to expect).
- Reviewing staff competency contributes towards outcome 3 (consumers are provided with clear information and are kept appropriately informed). Reviewing product information also contributes to this outcome.
- Reviewing the post sales process contributes to outcome 6 (consumers do not face unreasonable post-sale barriers). (5)

Question 2 Learning Outcome 2 (10 marks)

You are the Underwriting Manager of DF plc, a UK-based insurer. DF plc has recently settled a number of high value motor claims that have involved young drivers. You are reviewing the motor account, with regard to young drivers, in order to improve the profitability of the motor account.

Explain what steps you would take to review this account regarding young drivers, making specific reference to the risk, classification, terms and underwriting criteria. (10)

Answer to Question 2 (Learning Outcome 2)

As Underwriting Manager of DF plc, I have been asked to review the motor account in relation to young drivers and with specific reference to the:

- Risk
- Classification
- Underwriting criteria

In order to improve profitability an analysis of the risk and claims data is required and then underwriting terms can be amended accordingly. The steps I would take are as follows:

Step 1

I would first need to analyse the claims circumstances in regard to this sector of the account. Claims data can identify if the claim is for vehicle damage and/or third party liability and this will help with knowing where to apply underwriting terms for a risk. Trends in claims can be identified.

Step 2

The classification of young drivers will require full definition. The customer database will identify drivers that are below the age of 30 and these can be divided into different age bands of 25 to 30, 21 to 24 and under 21. This will help identify where the highest risks are located in the young age group.

Step 3

The classification of motor vehicles also needs clarification. Motor vehicles fall into two different classes of business. Under the personal lines classification the sub-classes are private car and motorcycle insurance. For commercial classification there are motor trade, commercial vehicles, agricultural and special types of plant. Motor cars are rated according to their group classification that is produced by the Motor Insurance Repair Research Centre. The group rating takes into account the repair costs, cost of parts, performance, security and value.

Step 4

Having identified the age groups and the car classifications, DF plc can combine this data and identify cover restrictions. For example it could restrict the car groups that drivers in the age bands mentioned earlier are able to use. Certain risks such as motor trade could restrict the cover that is provided to drivers under a certain age and this can be done through specifying, on each policy, all the drivers. Additional premiums can be charged and/or increased policy excess can also be incorporated. Commercial vehicles are rated according to their carrying capacity or gross vehicle weight. Restrictions can be placed on drivers such as the weight limit of the vehicle they are allowed to drive. Additional premiums can be charged and/or an increased excess applied when a particular driver uses the vehicle. Young drivers that have a claim free record can be rewarded with a discount in premium and reduced terms.

Drivers considered the highest risk are the most likely to have driving endorsements. Restrictions to the use of a vehicle, increased premium or excess, or a combination of both, can bring to the attention of the driver that they are more likely to be involved in an incident that gives rise to a claim.

By conducting a detailed analysis of the driver data and the vehicle they are using, appropriate terms and premiums can be applied. This will improve the profitability of the account.

(10)

<u>Question 3 – Learning Outcome 2 (20 marks)</u>

PT plc, an insurer, writes both personal lines and small commercial business on a direct basis. PT plc's investors have agreed to support a significant growth strategy over the next five years. PT plc are now considering increasing its product range to write larger commercial risks and is reviewing the distribution of its products.

(a) Identify and justify the potential impact on the structure and organisation of PT plc if a new product range is adopted and the distribution method changed. (10)

(b) Explain the impact on the pricing model if PT plc decides to distribute its products through an intermediary. (10)

<u>Answer to Question 3 (Learning Outcome 2)</u>

(a) Any change in the product range and distribution method will have a considerable impact on the way PT plc (PT) is structured and organised. Currently PT distributes its products (personal lines and small commercial) direct with customers. If PT now wants to write larger commercial risks they are unlikely to be able to do so by retaining their current distribution model and will need to sell large commercial risk products either through the intermediary channel or through

a delegated authority. This is because large commercial businesses have diverse needs and are, therefore, more complex in terms of their requirements than the small commercial risks PT are used to. 85% of all commercial insurance business in the UK is transacted through an intermediary. This will have an impact on the structure and organisation of PT.

Although the intermediary will employ staff with very specific areas of expertise, who will interact directly with the client and understand the nature of the risks involved, PT will still need to employ specialist staff. These staff will include underwriters, claims staff and experts who will be able to design and price their new product range appropriately to ensure the optimum balance of cover and price is achieved in line with PT's business and underwriting strategy and goals.

It is likely that these specialist staff will need their own division in recognition of the different operational methodology of the directly transacted, less complex risks. Support staff will need to be employed to correctly market and manage the new operation. In particular broker development staff will need to be employed to manage the relationship between the intermediaries and PT's underwriters.

In comparison to the way business is transacted and the structural and organisational arrangements at PT, transacting business through an intermediary means that less client facing staff will be required. Staff involved in the operation of larger commercial risks, distributed through intermediaries, do not need to have client facing skill sets as they will not be dealing with clients. They will deal, on a day to day basis, with intermediaries and those involved with the management of claims. Therefore the training and competency needs of these staff will be quite different. It is likely that PT will need to employ staff with very different experience and skills. PT will need to ensure its staff remain fully trained and competent in a much more diverse range of sectors. The emphasis will be on technical knowledge rather than the softer, people skills, of the existing employee base. (10)

(b) There will be an impact on the pricing model if PT decides to distribute products through the intermediary channel. The cost of hiring addition staff and experts from a diverse range of sectors will need to be reflected in the pricing structure, along with the increase in expenses for hiring experts such as surveyors, who will need to conduct quite complex site surveys for underwriting purposes.

In addition, commissions will need to be paid to intermediaries to encourage them to bring their clients to PT. Additional expenses such as assisting intermediaries with marketing costs and documentation will need to be factored in to the pricing equation.

Clearly the pricing models for direct and intermediary business differ significantly. The net, or pure price of a risk, is derived from the summation of:

- the claims cost and experience
- any extensions to cover or individual modifications depending on the demands and needs of a very complex risk (as negotiated by intermediaries with differing influences)
- the expense and commission issues discussed above (which differ according to the role played by the intermediary and potential by the scale of commission offered by PT to their supporting intermediaries).
- the intermediary distribution methodology (e.g. is the product distributed through a scheme or delegated authority).
- Staff costs and expenses and reinsurance costs.

All the above issues mean that the pricing of the same risk through an intermediary may be very different than the same risk transacted directly. This is particularly true where underwriting and claims authority has been delegated to an intermediary, as it will result in lower expense costs for the insurer.

Another key consideration in terms of pricing is the cost of reinsurance and the expertise required to source and manage appropriate reinsurance in a new risk area with a new distribution philosophy.

Finally, there will be an impact, either positively or negatively on the cost of professional indemnity and E&O insurance premiums and the limits of cover required if distributing products through intermediaries. This will have a knock on effect on product pricing. (10)

Question 4 – Learning Outcome 3 (10 marks)

You were the lead underwriter of an insurer in a project which launched a new product where no historical data existed. The insurer's senior management team are keen that the emerging claims experience for the new product is fully taken into account in the underwriting criteria, policy terms and conditions.

Explain how the emerging claims experience should be used to improve the product's future development and performance, identifying any potential problems. (10)

Answer to Question 4 (Learning Outcome 3)

A significant factor to be considered when underwriting and determining the right price to charge (in line with the profitability goals and underwriting strategy) for any risk, is the statistical analysis of past claims experience.

When designing a new product it is extremely difficult to make sure that the cover and pricing are optimised, due to the lack of statistical data to review. Therefore, emerging claims experience becomes essential in ensuring price and cover can be adjusted to achieve the underwriting goals.

Here, the claims team must work very closely with the underwriting team in ensuring feed-back is timely, appropriate and accurate. There is a danger than too much is drawn from early analysis as an accurate picture, with appropriate conclusions, cannot be drawn until the volume of claims data allows trends to be identified and understood with the cover and price of the product adjusted accordingly. Single event large losses are likely to skew claims data analysis leading to incorrect conclusions.

In addition, too much emphasis on past claims experience can also lead to false assumptions as the environment is ever changing. This is where the expertise of underwriters, claims experts and analysts is paramount. Understanding and interpreting historic claims data is very complex where the environment changes and there are changes in regulation or law, or even in habits and trends. Over reliance on historical data can lead to incorrect conclusions.

In this way the initial product is moulded by the claims experience and the underwriting profitability is maximised by reviewing the claims data to see where spikes in the trends are coming from. This allows the underwriting team to try to adjust their strategy to fit the most profitable areas and minimise taking on risks which are burning too high.

It should be noted that introducing a new product should be seen as a long term strategy and, due to investment costs, it may not be profitable in the early years; however there may be pressure to prove the original product plan was profitable. (10)

Question 5 – Learning Outcome 4 (20 marks)

MF plc, a UK-headquartered insurer, has offices in ten countries. When reviewing its claims data, MF plc carefully consider the following:

- Credibility of the data
- Segmentation of data
- Changes in inflation rates

Despite these considerations, discrepancies and inaccuracies in claims forecasts have arisen.

Explain the other internal and external factors that MF plc should also take into account to improve claims cost forecasts. (20)

Answer to Question 5 (Learning Outcome 4)

Understanding claims data and accurately forecasting claims performance is essential to the correct pricing of an insurance product and the cover incorporated. This will also, therefore, affect the ultimate profitability of any insurer. In this case, MF plc (MF) is a multinational insurer and the claims forecasting is even more complex due to cross-border issues.

In addition to ensuring the credibility of claims data, correct segmentation of the claims data and taking into consideration changes in inflation rates, there a number of internal and external factors which MF need to consider. This will ensure that their claims forecasting remains accurate and, therefore, credible and useful information is generated to feed back to the underwriting and pricing teams.

Internal Factors

Internal factors are those over which MF has control. These include:

- **Changes in cover or limits**. Any change in the cover, excess or deductible taken or policy limits granted will have an effect on the claims experience. The original claims forecast will be based on out of date parameters and so the claims data will differ from that expected. This can mean the claims data is actually better or worse, depending on what cover was granted by the underwriter.
- **Reserving**. Any change to the reserving philosophy will have an impact on claims experience. Claims reserving decisions must be fully understood to allow data to be correctly interpreted. There is also the risk of claims backlogs and out of date reserves skewing the data.
- **Risk management**. Changes in risk management practices will clearly alter the expected claims result. This can be either an internal factor -for example where the underwriters have imposed a requirement for a new sprinkler system to be installed, or external, where the insured has undertaken a risk improvement under their own initiative. If the insurer is not told of any such improvements its claims forecast is likely to be inaccurate.

External Factors

External factors are those MF has no control over. They include the following:

- **Changes in exchange rates.** Exchange rate fluctuations have particular impact where claims are paid across national borders. In the case of MF, where claims are paid from the UK to other

countries, exchange rate changes from the time when claims were forecast will have an impact and it is hard to accurately forecast future currency exchange rates.

- **Frequency of loss.** Frequency is the number of losses over time. The longer the time period the more accurate future losses can be predicted. Depending on the class of business written, frequency can be measured by calculating the number of losses by other factors. These factors can include number of vehicles for motor fleet cover, wage roll, turnover or sum insured as the basis for the calculation. Changes in the economic climate will have an impact on the frequency of loss.
- **Severity.** This is the size of loss and can be very hard to predict. Catastrophe losses where they occur may be very difficult to predict or take account of.

In addition to the above, claims procedures may need updating to take account of legal changes, working practices, updated crime rates, emerging risk and changes in the economy. (20)

Question 6 – Learning Outcome 4 (20 marks)

You are the lead property underwriter for CR plc, an insurer. A risk which has not made an underwriting profit for the last three years is due for renewal. You have agreed to underwrite the risk again.

Describe the **four** main pricing elements that you would consider when setting the premium and explain how **each** element could contribute to profitability. (20)

Answer to Question 6 (Learning Outcome 4)

There are four main pricing elements to consider when establishing a premium. In relation to this particular renewal, where there has been no underwriting profit for the last 3 years, those pricing elements are described below, together with an explanation of their contribution to the profitability of CR plc:

1. Risk Premium

The risk premium is the total expected cost in claims allowing for all eventualities.

The underwriter's task when setting the appropriate risk premium is to analyse the risk being offered and to forecast future claims costs. Therefore, to be profitable, either the overall premium must increase or the risk decreases through effective underwriting and cover adjustments. The only other thing that might affect risk premium and ultimate profitability is that the client has carried out risk management to improve the risk, which will reduce the rating factors. Risk management improvements can be imposed by the insurer or completed on a voluntary basis. We may decide to dictate terms which require certain risk improvements to take place. Examples include a sprinkler system to be installed or an updated security enhancement.

The new, higher, premium could be offered on the basis that the loss ratio has been poor. It is quite likely that the client would accept a certain level of increase as it may be quite hard to get competitive terms elsewhere based on the loss experience. However, in the current soft market there may be other underwriters who may be very happy to write this risk at the existing premium level and so any increase should be balanced against the risk that the client may not renew.

If the client has undertaken risk improvements, or if we as an underwriter limit the cover or impose exclusions and risk improvement requirements, then the potential cost of future claims

is reduced and the risk premium will also be reduced as risk premium is the sum of the ultimate cost in claims plus an allowance for the degree of uncertainty attaching

At each renewal, the underwriter must reconsider exposure, subject matter, scope of cover, rating factors, claims experience, large losses and also possible future issues may arise. It is imperative that all these issues are checked when renewal takes place.

Ultimately, the contribution of risk premium to profitability is a measure of the quality or accuracy of the predicted cost of claims for this risk in this insured period.

2. Expenses

Expenses contribute to the overall premium and play a considerable part in the profitability of the business. Some expenses can be controlled on a case by case basis. However, some expenses are fixed.

If the risk premium is higher than previous years the overall premium will have to increase and this may mean the client does not renew. However, if costs can be controlled, this may reduce the overall premium without effecting profitability.

There are a number of expenses to consider:

Fixed expenses. These relate to processing costs which are independent of the size or complexity of the risk. Fixed costs will include staff, buildings and IT costs. It is difficult to reduced fixed expenses on an account unless business is handled in a different manner. Fixed expenses include levies and taxes which cannot be avoided.

Variable expenses. These are those which are incurred in running the account such as site visits, surveys and servicing for instance. It may be possible to reduce variable expenses by, for example, surveying less frequently.

Claims-handling costs. These may be reduced by reviewing loss-adjuster expenses, having less site visits and having fewer audits. If there is a high claims frequency a larger excess may help to reduce the claims handling cost.

Reinsurance costs. These maybe reduced if an improved deal can be negotiated with our reinsurers. Reinsurance can be expensive and if a better deal can be obtained then this saving can be put back into profitability. However, there is a temptation to buy less reinsurance and this must be balanced to protect the overall book. If appropriate, a review of the facultative arrangements can take place to see if the costs can be reduced.

Intermediary Remuneration. All commissions need to be built into the premium and should be fair. It may be possible to negotiate a reduced premium if the broker is keen to retain business where the premium increases to the extent that a client may look for another intermediary.

3. Profit

Clearly, insurers are in business to make a profit for their shareholders. Profit must be factored into the overall premium and is very closely linked to loss ratio. A good loss ratio, where the actual losses incurred are less than the risk premium, will result in a profit. A poor loss ratio, as has been experienced for the last three years, will use capital reserves rather than add to them or allow the insurer to pay a dividend to shareholders from the profit generated.

4. Return on capital employed (ROCE).

The insurer could still make a profit even if there is an underwriting loss as the premium charged could be invested and the profit from the investment could make up for any underwriting loss. (20)

Question 7 – Learning Outcome 5 (20 marks)

You are the lead property underwriter for XJ plc, an insurer. An intermediary has presented you with a risk involving two recently constructed warehouses at the same industrial site. The warehouses are 100m apart from each other and close to a river. There is open space between the two warehouses.

Explain and justify the factors that you should take into account when considering potential aggregation of this risk. (20)

Answer to Question 7 (Learning Outcome 5)

The term aggregation relates to an accumulation of insured risk, which may expose a single insurer to more than one claim arising from a single cause of loss. It is very important for an insurer to fully understand and assess the risk of aggregation and not simply to view each risk in isolation. An insurer's approach to aggregation will form a key part of their underwriting strategy.

In this case, as the lead property underwriter, a possible approach would be to create a table listing all the classes of business insured in one column, next to each class, list what is being insured and then in a third column to list the nature of potential aggregation. Where sums insured and limits are known, they could be added to the table resulting in a clearer understanding of the aggregated values and a clearer picture of the overall risk.

The issue here is not with the individual risks themselves, it is the fact that we would be underwriting both risks next to each other. This could cause issues with our underwriting strategy depending on the estimated maximum loss (EML) as it could be that the combined risk is too large for our strategy. We would need to consider carefully the risks in both warehouses, making sure that we fully understand all the risk factors and the interdependencies between both warehouses. We also need to ensure that the overall risk would fit our risk acceptance criteria. We need to understand the losses covered and in what instances a loss will mean potential claims at both warehouses. Is there enough separation between the two warehouses to minimise fire spread? We would need details of the construction of the warehouses to consider how they would perform in bad weather and what the chances are of a total loss on both buildings.

Also, how would the warehouses fit into our overall portfolio of business placed? Do we have a limit of business we can write close to the watercourse? Would we need to review our underwriting strategy to make sure that underwriting these two warehouses would not cause an issue with the overall company strategy.

Depending on the geography we could put the risk data through a Catastrophe Model. This is a complex tool which enables underwriters to see the chances of having a loss and also the potential damage a loss would cause if it were to happen. They can put through the model various potential losses to see what the outcome would be. The model will allow for all risks to be inputted showing exposure across the entire underwriting book, which enables a far greater understanding of the business written and therefore the ability to adjust the underwriting strategy to compensate for perhaps too much business in one territory. We can also look at how much business is placed close to the watercourse as the models will allow you to plot distance to water from the coding in the models. This will enable us to see if the book of business could be

prone to flooding and whether we should either stop writing business close to the watercourse or invest in extra reinsurance.

Furthermore the modelling allows the underwriting book to be analysed to make sure that the reinsurances that were in place are still relevant. It may be the case that that a treaty reinsurance put in place at the start of the year, only has a certain limit for a particular area so if the business wishes to continue to underwrite in that area they must either self-insure or buy further reinsurance (probably facultative). (20)

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

You are an underwriter for NC plc, an insurer, and have been asked to cover a large property risk. The risk, a warehouse where there are no aggregation issues has recently had a new sprinkler system installed. The property falls within your target market and seems to fit NC plc's underwriting policy of writing quality, well managed properties. However, the market is hardening and capacity is very limited.

(a) Explain how you might calculate the maximum exposure relating to this single location risk in order to determine whether NC plc have sufficient capacity to accept the risk onto their books. (12)

(b) Explain how the underwriting considerations might differ if NC plc were operating in a 'soft' market. (8)

(c) Explain how the cost and availability of reinsurance will affect your decision as to whether to cover the new risk. (10)

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

(a) The maximum capacity will follow from the underwriting strategy and will be documented in the underwriting policy, although it may vary depending on the nature and quality of risk. It is quite possible that a good risk like this one may have a higher maximum capacity.

The maximum capacity is the maximum amount of exposure NC plc (NC) are willing to accept for this risk. The amount, referred to here as the full value sums insured, will be expressed as a sum insured for the property and associated risks, but it can also be a limit of indemnity. The amount represents the considered potential of a claim and it needs to be carefully calculated to see if it falls within the maximum capacity and whether or not there is enough capacity available to write the risk. NC must ensure they maintain enough assets to pay the claims as well as maintain specific levels of capital in accordance with the statutory rules.

NC is likely to use one of two methods to calculate the maximum exposure and, therefore, determine whether they have sufficient capacity to accept the risk. These two methods are explained below:

Calculate the full value sums insured. The risk should not be seen simply as the total cost of rebuilding the warehouse if, for example, it were destroyed by fire. A single loss can often trigger different covers, so the aggregation of the sums insured should be considered in order for the true maximum exposure to be calculated. In the case of a fire, both the material damage costs and the business interruption costs must be considered.

Estimated maximum loss (EML). The second method used to measure exposure is to assess the EML at this location. EML is the amount which is considered to be an accurate reflection of

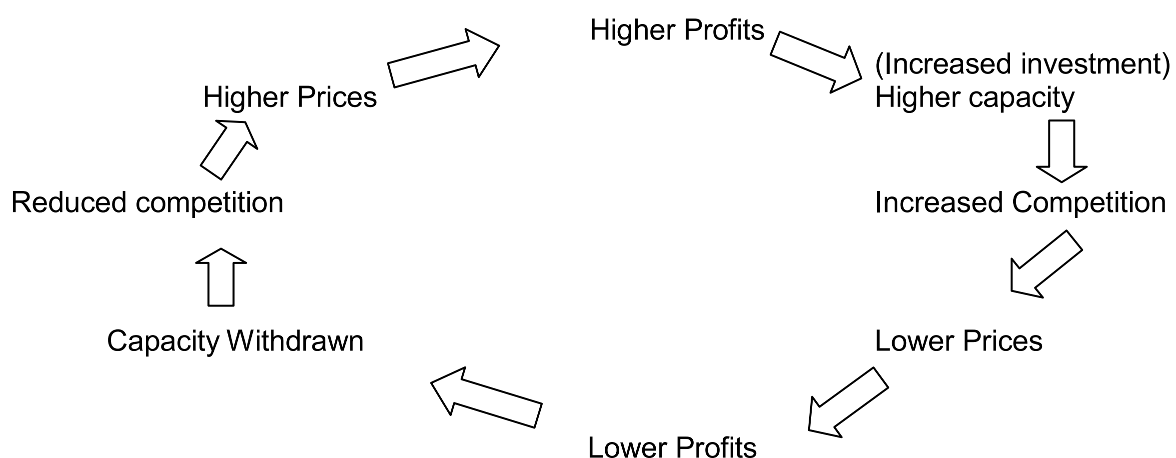
the worst possible financial effect that the maximum foreseeable loss would have. It is normally expressed as a percentage of the sum insured.

The correct EML can be difficult to establish and would require a detailed site survey report where the surveyor must consider a wide range of criteria including, but not limited to, fire protections, construction material, contents of the warehouse (their nature, distribution and combustibility), the use of the building (any hazardous processes and substances), proximity to any other high-risk buildings, standard of management, housekeeping procedures and risk management.

An overestimate of the EML could mean the risk is not taken on if it falls above NC's maximum capacity, or the unnecessary purchase of reinsurance. Underestimation could lead to the risk being accepted even though it is over NC's maximum capacity limits and potentially leading to a situation where a loss is paid for where insufficient provision has been made, resulting in poor profitability. (12)

(b) Since the 1930's the insurance market has always been in a state of pricing flux. There is either a hard market (premium rates going up) or a soft market (premium rates going down). The reasons for this cyclical trend in the insurance market are varied and it should be noted that every insurance market follows its own pace across the globe and even within the same market, different classes of business may be at differing stages of the cycle.

The price of insurance products varies in relation to the availability of capital, which is in turn influenced by the actual or perceived profitability of the insurance market or insurance product within that market. Profitability is directly influenced by the number of claims experienced. Price instability in a hard market is caused by the in-flow of market capacity as high rates and selective underwriting lead to profitability. As market capacity increases, premiums start to fall through competitive pressure to maintain market share. This creates what is known as a soft market. However, the lower pricing and less stringent underwriting which characterise a soft market, also lead to reduced profitability. As the returns on capital invested reduce, so too does capacity. This leads to an increase in premium and more selective underwriting. The process is illustrated below:



In a soft market, there is more likely to be more capacity. This will lift the maximum capacity for this particular risk, meaning NC will have a greater appetite to write this risk and potentially other risks as it will have more capital to write business. In addition, there will be more competition for the better risks and NC's underwriting policy may enable the underwriting and

acceptance considerations to be more aggressive, or more relaxed in terms of cover restrictions and pricing, to ensure they are competitive. (8)

(c) Although the insurer may have capital reserves to pay potential claims for this risk, it faces the same uncertainty of a loss occurring as the insured. Uncertainty surrounds the frequency and severity of loss which, once the risk is accepted, will be carried by NC in return for a premium. Reinsurance offers NC, as a reinsured, protection. Reinsurance offers NC stability as it frees up capital and it protects against catastrophes. However, reinsurance premiums increase the expenses element of the overall premiums and can reduce short term underwriting profitability.

Like insurance, reinsurance is subject to its own market cycle. In fact, reinsurance is particularly susceptible to market cycles because underwriting terms, conditions and price are generally agreed in advance of the treaty or contract period and cannot be amended mid-term. In addition, as the renewal of many large treaties is clustered around certain dates (such as 1st January), the swings resulting in changes to pricing and terms are more marked than for direct insurance, as the reinsurer must consider the whole year ahead.

The cost and availability of reinsurance will fluctuate. However, only facultative reinsurance relating to specific risks would be incorporated in this premium as a specific cost. As reinsurance costs are a key part of an insurer's expenses, the availability and cost of reinsurance will directly affect the decision to cover the new risk. As reinsurance rates increase, NC will need to make a decision to purchase less reinsurance cover, or reduce the profitability of this risk. The overall decision will be dictated by the maximum capacity, the underwriting strategy and the underwriting policy.

In the end, it will come down to a decision based on profitability. Reinsurance is a key element because it directly affects profitability. (10)

Question 9 – Across more than one Learning Outcome (30 marks)

AB plc is an insurer with a long history of successfully insuring high risk, high premium commercial properties which other insurers tend to avoid.

(a) Explain **five** key elements in AB plc's underwriting strategy which may have contributed to the success of this business. (20)

(b) Explain the range of actions AB plc could take at each property renewal to manage an individual risk which had a particularly high number of claims. (10)

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

(a) AB plc's underwriting strategy is one of high risk for high gain. The insurer has a risk appetite for risks other insurers tend not to underwrite. AB has been successful which indicates it understands the risks it underwrites and prices accordingly.

There are a range of elements which are most likely to lead to its success, I have identified the ones I believe are most likely to make a contribution to successful underwriting of AB's high risk, high gain strategy, and these are explained below:

- **Disciplined underwriting.** All AB plc's underwriting activities should relate to the underwriting strategy. The underwriting strategy must be communicated clearly and be understood by all staff by means of business plans, broken down into key elements.

The strategy should be regularly reviewed to ensure it is still appropriate and that the operation is being conducted in line with the strategy. No risk which falls outside the objectives should be accepted. Due to the high risk nature of AB's strategy, it is even more important to understand each risk. It may be that underwriting surveys are conducted. Underwriters will need to trust their intermediaries and not be afraid to say no if risks do not meet target parameters.

- **Appropriate pricing.** This is essential to ensuring profitability. The premiums charged should be in line with the risks accepted and anyone involved in establishing price must have a good understanding of the elements that contribute to price, expenses, risk premium, profit and capital. The premiums must also be acceptable to ensure a high enough take up and good communications with intermediaries is essential in achieving an understanding of the market's response to the price. A very detailed understanding of maximum loss is required in relation to pricing.
- **Good use of claims information.** The business will not be profitable if the claims history is not understood. This requires careful analysis and excellent lines of communication between the underwriting, claims and actuarial functions. An awareness of the limitations of historical, statistical data is also required, as is ability to project forward in terms of forecasting, identifying trends and understanding the market as well as an ability to look back. Aggregation may be an issue and there will certainly be a need for catastrophe modelling and it could well be that AB has very sophisticated modelling systems which give them an advantage over competitors, who do not have access to such facilities. A good claims team will also reduce claims leakage (this is where a claim is settled which should not have been or where settlement is at a greater cost than it should have been) which means that your net claims margin will reduce. This is essential in any business but more so when dealing with high risk business as the potential exposure and amount of losses is greater.
- **Good use of reinsurance.** Reinsurance is essential to profitability in that it provides protection of the book, frees up capital to write more business, maintains claims stability and protects against catastrophes. However, buying too much will reduce profitability and it will be important to understand the reinsurance market so the most competitive cover can be sourced. The reinsurance strategy must be in line with and directly support the underwriting strategy. AB's ability to buy reinsurance at an advantageous rate and negotiate a good deal on its outwards coverage is key. AB will need to make sure that the coverage is the same as the direct placements and that the reinsurers are stable as any that go into liquidation will affect the company's bottom line profit.
- **Goal orientation.** For AB to remain profitable, everything it does must be in line with a clear set of goals which are, in turn, derived from the corporate strategy. There will be a 12 month, 2 year and 5 year plans against which performance can be measured and appropriate corrective action taken where required. (20)

(b) At renewal there are a range of options available for AB to take for a risk that has experienced a particularly high number of claims. AB can choose not to offer renewal terms. Alternatively AB could increase the premium, or change the terms of the cover, or use a combination of premium increase and cover changes. AB is an insurer who has experience at writing high risk business, so it may choose the later. The key is to analyse the losses which have occurred to look for potential patterns, or emerging trends in the loss history and take action which is appropriate to reduce the exposure or increase the premium to ensure profitability.

It may be that the risk has simply experienced a number of unique unrelated losses. If that is the case, it may be possible to apply a premium calculation based on the claims generated. This is known as 'burning cost'. This method is an experienced-based method that translates the actual incurred losses into a rate against a measure of exposure. For this method to be valid, a sufficiently high number of claims must be analysed to ensure the result is reliable and unlikely to have occurred by chance. In this case, a significant increase in premium may result in the insured investing in risk management that will naturally reduce the incidence of future claims. The burning cost method is transparent in that the insured will understand how it is calculated and takes into consideration only the individual risk history.

However, AB could apply terms which require the insured to carry out specific risk management activity that will improve the risk (such as change the composition of certain materials used in construction, conduct fleet risk management, or install a sprinkler system). If there are a high number of lower value claims, AB could also increase the excess, so that the insured is effectively self-insuring these claims. If the moral hazard is high and traditional risk management has not worked, a co-insurance clause may be applied. Cover exclusions could also be applied to improve the risk from the insurer's perspective.

AB could increase the amount of stop-loss reinsurance that it purchases and charge the costs on to the client.

With a high return on investment, it may still be possible to generate profit with an underwriting loss. However, if the losses are too high, the premium that AB may have to charge in order to be profitable, may be too high for the insured to accept. The key is to conduct careful analysis of the claims and take appropriate action. (10)

Question 10 – across more than one learning outcome (30 marks)

DE plc, an insurer, has the following claims information for their motor account:

Number of claims (x)	Probability P (x)
1	0.10
2	0.25
3	0.35
4	0.20
5	0.05
6	0.05

Cost of claim (x)	Probability P (x)
£250.00	0.50
£600.00	0.35
£1,200.00	0.07
£1,500.00	0.05
£2,100.00	0.03

(a) Calculate, **showing all your workings**, using the above claims information, the expected total value of claims. (5)

(b) Explain the limitations of using statistical data when estimating the likely future claims experience for DE plc's motor insurance account (5)

Burning Costs

Underwriting year	Insured Values	Incurred Claims
2011	£500,000.00	£100,000.00
2012	£750,000.00	£150,000.00
2013	£800,000.00	£400,000.00
2014	£1,000,000.00	£700,000.00

(c) Calculate, **showing all your workings**, using the above information, the burning cost for each year of account and the total aggregate for the period 2011 to 2014. (5)

(d) Explain, with justification, **five** underwriting actions DE plc could take to seek to improve the cost of claims in future underwriting years. (15)

Answer to Question 10 – across more than one Learning Outcome (30 marks)

(a) The expected total value of all claims is the sum of each of the individual expected values for each claim. The expected values are a multiple of the number of claims, their values and their probability. The calculations for each expected value and the total expected value are shown in the tables below:

Number of claims	Probability	Expected Value (Number of claims x Probability)
1	0.1	0.1
2	0.25	0.5
3	0.35	1.05
4	0.2	0.8
5	0.05	0.25
6	0.05	0.3
	Total	3

The two totals, once multiplied now represent the total expected value of the claims shown on DE plc's motor account claims:

3 x £557 which = £1671 (5)

(b) When estimating the likely future claims experience for DE plc's motor insurance account, care should be taken not to place an over reliance on statistical historical data. The data must be reliable and relevant. There should also be an understanding by DE plc's underwriters and claims managers, that the past claims data may not be indicative of future claims where the following is likely to occur:

- Changes to the underlying risks. For example offering fully comprehensive cover where third party only was being offered.
- Changes to the policy wording following the addition of exclusions or policy limits, thereby eliminating losses which have occurred in the past.

- Changes in exposure over time, such as a change to the premium base.
- Changes in legislation (motor insurance is compulsory and there may be changes in the law).

These unplanned events can change both the frequency and/or severity of future claims. The impact of future exposure periods should be understood in light of any potential changes that will affect or disrupt the reliance on past data. (5)

(c) The burning cost for each year of account and the total aggregate for the period 2011 to 2014 are shown in the table below. The burning costs are calculated using the following formula:

Insured value for each year divided by the incurred costs. This value is divided into 100 so it can be expressed as a percentage. For example for 2011:

500,000/100,000 = 5
100/5 = 20%

The total burning cost is a sum of each year divided by the total number of years:

20+20+50+70=160
160/4 = 40%

Burning Costs

Underwriting year	Insured Values	Incurred Claims	Burning Cost
2011	£500,000.00	£100,000.00	20.00%
2012	£750,000.00	£150,000.00	20.00%
2013	£800,000.00	£400,000.00	50.00%
2014	£1,000,000.00	£700,000.00	70.00%
Totals			40%

(5)

(d) There are a range of underwriting actions DE plc could take to improve the cost of claims in the future. High quality claims analysis should be able to identify trends that would allow the cover to be adjusted to eliminate some of the losses. These include:

1. **Age or experience restrictions** could be applied. If a trend is emerging for young driver losses, or losses on high performance cars, this would be quite effective. Age restrictions could be linked to engine performance or even experience on vehicle type.

2. If there are a high volume of smaller value claims, the **excess** could be increased. Is would effectively impose a level of self-insurance on the insured as they would pay for the first part of any claim.

3. Limitations on cover, or premium increases could also be applied for drivers with driver related **convictions,** such as speeding or drink related issues. Once again, good quality claims analysis would indicate if this would be effective.

4. The cost of claims could also be reduced by ensuring that the **claims supplier network** remains cost effective. It may be that deals can be agreed with suppliers and repair networks in return for a clause which would limit insureds to using only insurer approved suppliers for vehicle and accident repair.

5. **Claims function performance**. If the claims costs are high, it may be that the claims function is not operating correctly and claims maybe paid which fall outside the cover. The underwriting function needs to work closely with the claims function to ensure good communication, so that the claims team only pay the claims they should and the underwriting function obtain accurate claims data. (15)