Subject SP7

CMP Upgrade 2022/23

CMP Upgrade

This CMP Upgrade lists the changes to the Syllabus, Core Reading and the ActEd material since last year that might realistically affect your chance of success in the exam. It is produced so that you can manually amend your 2022 CMP to make it suitable for study for the 2023 exams. It includes replacement pages and additional pages where appropriate.

Alternatively, you can buy a full set of up-to-date Course Notes / CMP at a significantly reduced price if you have previously bought the full-price Course Notes / CMP in this subject. Please see our 2023 *Student Brochure* for more details.

We only accept the current version of assignments for marking, *ie* those published for the sessions leading to the 2023 exams. If you wish to submit your script for marking but only have an old version, then you can order the current assignments free of charge if you have purchased the same assignments in the same subject in a previous year, and have purchased marking for the 2023 session.

This CMP Upgrade contains:

- all significant changes to the Syllabus and Core Reading
- additional changes to the ActEd Course Notes and Assignments that will make them suitable for study for the 2023 exams.

1 Changes to the Syllabus

There are no changes to the syllabus objectives.

2 Changes to the Core Reading and ActEd text

This section contains all the ***non-trivial*** changes to the Core Reading and ActEd text.

Chapter 1

Section 8.1

The first paragraph at the top of page 26 has been reworded to aid clarity as follows:

> This is the amount of claims paid (as above) *plus* the increase in the total reserve for outstanding claims (also expressed as claims incurred). For example, suppose that a claim for £1,000 is reported on 20 December 2018, but payment is delayed until 2 January 2019. In this case, the 2018 claims *paid* would be unchanged but the 2018 reserve for outstanding claims would increase by £1,000, leading to an increase of £1,000 in the 2018 claims *incurred*.

Chapter 6

Section 1.1

The first sentence in the last paragraph at the bottom of page 3 has been deleted, in line with the change to the Glossary definition of 'return commission' outlined below.

Chapter 7

Section 3

Additional material has been added to this section. Please use replacement pages 19 to 22a provided at the end of this Upgrade to update your materials accordingly.

Chapter 9

Section 1.2

On page 4, immediately after the first paragraph of Core Reading, the following additional paragraph of Core Reading has now been added:

> **It is also important to consider the time period over which inflation will be applied. Within a pricing context, although we will typically price contracts for the forthcoming year, the inflation assumptions need to reflect the claims environment at the point of settlement of the claims arising from the policy period. This may be many years after the initial policy was written, so could experience much heavier inflation than at the point of writing the policy. Similarly, when reserving, the inflation assumptions need to reflect expectations over the period to settlement of the claims, which will depend on the maturity of the portfolio.**

Chapter 20

Section 1.2

The last paragraph of Core Reading at the bottom of page 3 has been reworded as follows:

> **As an example of how the elements of insurance risk might be treated, potential claims arising from catastrophes are usually analysed using the output from proprietary catastrophe modelling software, or by using scenario tests if catastrophe modelling software output is not available.**

Section 4

The material in Section 4.6 has been merged with the material in Section 4.5 and some additional ActEd text has been added to the combined Section 4.5. Section 4.7 has then been renumbered as Section 4.6 accordingly. Please use replacement pages 19 to 20a provided at the end of this Upgrade to update your materials accordingly.

Glossary

The definition of 'return commission' has been amended, to remove 'Also called overriding commission.' The revised definition is therefore simply:

> **Commission paid by a reinsurer to an insurer ceding proportional business, as a contribution towards expenses and profit.**

3 Changes to the X Assignments

Overall

There have been a number of minor improvements to the X Assignment questions and solutions, including replacing Question X6.5 with an entirely new question. Due to the number of changes involved, we have not detailed them individually in this upgrade, and recommend that the new 2023 X Assignments should be used.

If you would like the new assignments *without* marking, then retakers can purchase an updated CMP or standalone X Assignments at a significantly reduced price. Further information on retaker discounts can be found at:

acted.co.uk/paper_reduced_prices.html

If you wish to submit your scripts for marking but only have an old version, then you can order the current assignments free of charge if you have purchased the same assignments in the same subject in a previous year, and have purchased marking for the 2023 session. We only accept the current version of assignments for marking, *ie* those published for the sessions leading to the 2023 exams.

4 Other tuition services

In addition to the CMP you might find the following services helpful with your study.

4.1 Study material

We also offer the following study material in Subject SP7:

- Flashcards
- Revision Notes
- ASET (ActEd Solutions with Exam Technique) and Mini-ASET
- Mock Exam and AMP (Additional Mock Pack).

For further details on ActEd's study materials, please refer to the 2023 *Student Brochure*, which is available from the ActEd website at **ActEd.co.uk**.

4.2 Tutorials

We offer the following (face-to-face and/or online) tutorials in Subject SP7:

- a set of Regular Tutorials (lasting a total of three days)
- a Block (or Split Block) Tutorial (lasting three full days)
- an Online Classroom.

For further details on ActEd's tutorials, please refer to our latest *Tuition Bulletin*, which is available from the ActEd website at **ActEd.co.uk**.

4.3 Marking

You can have your attempts at any of our assignments or mock exams marked by ActEd. When marking your scripts, we aim to provide specific advice to improve your chances of success in the exam and to return your scripts as quickly as possible.

For further details on ActEd's marking services, please refer to the 2023 *Student Brochure*, which is available from the ActEd website at **ActEd.co.uk**.

4.4 Feedback on the study material

ActEd is always pleased to receive feedback from students about any aspect of our study programmes. Please let us know if you have any specific comments (*eg* about certain sections of the notes or particular questions) or general suggestions about how we can improve the study material. We will incorporate as many of your suggestions as we can when we update the course material each year.

If you have any comments on this course, please send them by email to **SP7@bpp.com**.

3 Regulatory and fiscal regimes

3.1 The need for supervision

Why should insurance business suffer more legislation than, say, umbrella manufacturers? One of the reasons is that there is more scope for the purchaser to lose out financially. When you buy an umbrella, you have a look at it, and if you like it, you pay the price. However, with insurance, you pay the price at the start of the contract and you have to trust the insurer to pay valid claims as and when they arise in the future.

The uncertainty underlying insurance business means that it is not just a question of trusting the honesty of the insurer. The insurer may be very well meaning, but if the insurer's business is not soundly managed, you may find that the insurer has collapsed by the time you need to make a claim.

In many countries, therefore, there are specific rules and regulations that apply to general insurers. Different countries adopt different approaches to the regulation of insurers' operations.

3.2 Effect of the regulatory regime

The following regulatory restrictions on the actions of a general insurer may be encountered in one or more countries of the world:

- **A requirement to have an external audit of the general insurer's accounts and to release publicly certain information pertaining to the insurer.**
- **Restrictions on the type of business that a general insurer can write or classes for which the insurer is authorised.** An authority could prevent an insurer from writing volatile classes of business or classes where it had little expertise.
- **Limits or controls on the premium rates that can be charged.**

  For example, the authorities in some US states, *eg* Massachusetts, set the personal motor premium rates that must be charged. Some states require that rates are filed (sent to the relevant state department for approval) prior to an insurer using them. An authority could also set maximum or minimum premiums or restrict the way in which the premiums are calculated. For example, an authority could set a maximum allowance for expenses defined as a percentage of the gross premium.
- **Restrictions on the information that may be used in underwriting and premium rating**, perhaps to avoid unfair discrimination. For example, under the EU Gender Directive, European insurers cannot use gender as a rating factor. (This is discussed further below.)
- **A requirement to ensure fairness in the treatment of customers.**
- **A requirement to deposit assets to back claims reserves.**
- **A requirement that the general insurer maintains a minimum level of solvency, measured in some prescribed manner**, *ie* a minimum level of free assets. This might, for example, be calculated as a proportion of premiums written.

- **Restrictions on the types of assets or the amount of a particular asset that a general insurer can take into account for the purposes of demonstrating solvency.** This might be with the possible aim of avoiding risky investments or increasing diversification.
- **A requirement to use prescribed bases for calculating premiums or for valuing the general insurer's assets and/or liabilities when demonstrating solvency.**
- **Restrictions on individuals holding key roles in companies.**
- **Licensing of agents to sell insurance and requirements on the methods of sale and disclosure of commission / broking terms.**
- **A requirement to respond to thematic reviews conducted by the regulator.**
- **A requirement to pay levies to consumer protection bodies.**
- **Legislation to protect policyholders if a general insurer fails.**

Question

Suggest possible legislation that could be used to protect policyholders if a general insurer fails.

Solution

A fund could be set up to pay claims from failed general insurers. It could be funded by the government or by charging a levy on other insurers.

Companies could be required to deposit a large initial sum to a central governing body. This could be used to pay claims on default.

Fairness within the context of insurance

Regulators are keen to ensure that insurance products provide value to the customers and that customers are treated fairly. There are various ways that this can be addressed, from guidance on acceptable practices and rating approaches (see examples below), through rate filings and even to provision of cover itself, where the commercial markets would make insurance purchase prohibitively expensive (*eg* buying household flood insurance for a property that is built on a flood plain).

An example of a regulatory restriction: EU Gender Directive

The EU Gender Directive was passed in 2004, being aimed at 'implementing the principle of equal treatment between men and women in the access to and supply of goods and services'.

In its original form, the EU Gender Directive included an opt-out in respect of financial and insurance products provided that certain conditions were met. In March 2011, the European Court of Justice gave its ruling on the legality of the insurance opt-out provision, concluding that it is not valid and should therefore be removed with effect from 21 December 2012. From that point, insurance companies have no longer been able to use gender as a rating factor.

Insurance companies are careful to avoid the use of proxy rating factors (*ie* highly correlated to gender) that might be deemed to be indirect discrimination and thus also not permitted.

Clearly, the inability to differentiate between gender when setting premium rates is having significant implications for insurance pricing, particularly for motor insurance where there are material observed differences in claims experience according to gender at certain ages.

Each insurer is likely to set premium rates based on the expected mix of business by gender but there is the risk that this mix turns out not to be as expected. The introduction of this legislation has therefore increased the uncertainty of insurers' claims experience and profitability.

It is not yet clear how premium rates or underwriting practices have changed as a result of the ruling. However, it is likely that premiums have not simply 'met in the middle', but that there have been additional contingency loadings for the risk of business mix by gender not being as expected within the unisex pricing.

In other words, this legislation has also led to increased uncertainty, at least in the short term, and hence higher risk margins being incorporated in premiums by insurers.

An example of regulator thematic reviews: FCA Review of UK general insurance pricing practices

During 2019 and 2020, the Financial Conduct Authority (FCA), a UK regulator, conducted a review of the UK home and motor insurance markets. The FCA concluded that these markets were not working well for consumers. In particular, loyal customers were not getting good value and the FCA estimated that six million policyholders paid prices that were too high in 2018 and that if they had paid the average for their risk, they would have saved £1.2*bn*.

The FCA will be prohibiting any differential in pricing between new business and renewal policies going forward and banning the use of 'price walking' where customers pay a lower premium in their first year and their prices increase over time.

This legislation came into force in the UK from 1 January 2022. UK home and motor insurers now have to charge a renewing policyholder the same premium as they would charge an equivalent new policyholder.

The FCA also want to make it easier for customers to switch insurers. Policies that automatically renew discourage customers from shopping around. The FCA are looking for the insurance industry to meet customers' needs and in doing so treat them fairly. Technology is seen as a barrier to some customers and, to date, has meant it is easier for some customers to shop around to achieve lower prices.

In future, the FCA wants to provide long-term fair value for all customers and for customers to be able to trust this. There will be more monitoring by the FCA to ensure the new rules are being followed.

Other possible regulations

Other regulations that could be imposed on general insurers include:

- requirement to provide detailed reports and accounts at prescribed intervals
- requirement to purchase reinsurance
- requirement to hold a claims equalisation reserve
- limits on contract terms
- advertising restrictions
- prescription to hold certain assets.

Regulation is covered in more detail elsewhere in the course.

3.3 Effect of the fiscal regime

In most countries the taxation of general insurers broadly follows that for other businesses although there may be special features, such as allowing equalisation reserves to be held to allow for the uncertain nature of general insurance business.

For example, in some countries, transfers to equalisation reserves or catastrophe reserves may be allowable against taxable profit.

Some countries impose a tax on general insurance premiums for some or all classes of business.

4 Professional guidance

When carrying out work for a general insurer or reinsurer an actuary should always bear in mind any professional guidance relating to the work being carried out and the professional body to which they belong.

Institute and Faculty of Actuaries (IFoA) members practising in the UK need to comply with the Technical Actuarial Standards (TASs) that are issued by the Financial Reporting Council. Although the content of the TASs is not officially part of the Core Reading, a familiarity with them may help you pass the exam.

An actuary should also bear in mind guidance on professional standards in addition to guidance on technical issues.

All members of the IFoA are subject to The Actuaries' Code. This gives general guidance on professional conduct to which all IFoA members must conform in both the spirit and the letter.

In addition to formal guidance, the professional body may issue advice from time to time on specific issues.

The details of all the latest professional guidance issued by the IFoA can be obtained via its website: www.actuaries.org.uk.

Professional guidance is covered in more detail in Subject SA3.

Scenario testing should look at the impact of unlikely, but not impossible, adverse scenarios.

Actuaries should carefully consider which risks the firm is exposed to when designing the scenarios to be used as part of a capital assessment. They must also consider the relationships between different types of risks. They may actually model such relationships better using deterministic models rather than stochastic ones.

We can also use stress and scenario testing to test the output from a stochastic model.

Sensitivity testing

Sensitivity testing is the process of testing the extent to which the results of a capital model change as a result of making a small change to an assumption in the model.

As a minimum standard and part of the validation and sign off process, all capital models must be subject to some level of sensitivity analysis.

Purpose of sensitivity testing

The purpose of sensitivity testing is to identify the more sensitive assumptions in the capital model; that is, which assumptions, if changed, would have the greater impact on the results of the capital model.

We can then pay attention to the more sensitive assumptions. We can pay greater attention to justifying and documenting the rationale for selecting values of these assumptions, because they are more critical to the results of the capital model.

So stress testing and scenario testing are used to gain an insight into the uncertainty of our results. Sensitivity testing is used to gain an insight into which parameters have the greatest effect on the model result.

However, care should be taken where changes in assumptions have a smaller impact than expected due to the design of the model. It may be inappropriate to conclude that the assumption is less critical and may suggest that a re-evaluation of the model design is needed.

Applying judgement

When selecting assumptions, we must often make subjective judgements. (It is rare that we can choose assumptions on the basis of data analysis alone.) There might be several possible selections for an assumption, each appearing to be equally reasonable, yet we must decide which to select. In such a situation, it is informative to carry out a sensitivity test to find out the change to the capital model result from making a different (but equally reasonable) selection for the assumption under consideration.

Extent of sensitivity testing

Sensitivity testing should be as comprehensive as possible. However, in complex models, particularly where there are a lot of classes of business being modelled, it may not be practical to sensitivity test each and every assumption. For example, it may not be practical to sensitivity test the assumed loss ratio standard deviation for each class individually. In this case, we could test the sensitivity of the capital model results to changing the loss ratio standard deviation of all classes by a fixed multiple.

When it is not practical to sensitivity test an assumption for each class individually, we could sensitivity test the assumption for the two or three largest classes.

Communicating the results of sensitivity analyses

The results of sensitivity analyses should be communicated to the senior management to ensure that they understand the uncertainty associated with the setting of parameters.

Back testing

Back testing is the process of comparing actual experience with model output. It tests how well the model predicts the range of outcomes that actually occur.

Purpose of back testing

Back testing is essential in order to ensure that the model is a sufficiently accurate reflection of the real world.

As discussed above, one of the key requirements for a good model is that it should adequately reflect the risk profile of the classes of business being modelled, and back testing is a key tool in the assessment as to whether this requirement is being met.

It may indicate shortcomings in the model that are not detected by other tests.

In the development of a model, many assumptions are based on an analysis of historical data. There is therefore a presumption that past performance is a good indicator of future performance. Back testing can be used to assess the validity of this assumption.

Analysing the results of back testing

Any significant deviations between actual and predicted values that are identified by back testing will need to be analysed in order to understand the reason or reasons behind them.

An assessment will need to be made as to whether the deviation is simply a consequence of the expected random variation, a more systematic effect such as a permanent change in the environment, or an erroneous assumption or parameter.

If the deviation is deemed to be a systematic change, then changes may be made to the model or parameters.

Reverse stress testing

Reverse stress testing may be used to consider the scenarios that could lead to the failure of the insurer. The purpose is to make sure that the model captures the major exposures and key business risks.

Model review

The model should be peer reviewed by someone not involved with the day-to-day running of the model. This could be someone internally within the organisation or through the use of external specialists.

Market benchmarking may be used to compare the key assumptions and results with those of similar companies. Suitable benchmarks may be available from the regulators, market bodies or actuarial consultants.

Monitoring and feedback

An analysis of change compares the key inputs and outputs of the latest model with those from the previous version. This enables the key drivers of any changes to be identified.

Profit and loss attribution reviews the outcomes from previous years and tests them against the model parameters. The purpose is to create a cycle of feedback that drives a process of continuous model refinement, to ensure that there are no material sources of volatility not represented within the model.

4.6 Documentation (audit trail)

There should be a clear audit trail from the impact of any financial calculations to the relevant risk capital allocation in the capital model, whatever modelling approach is adopted.

We should justify and document the rationale for selecting assumptions, especially the more critical assumptions. We should also document the known limitations associated with the selected assumptions, and any testing that has been carried out to assess the materiality of the assumptions. Documentation should also justify the methodology selected and mention the alternatives considered and why they were rejected.

In addition, where we have considered particular risk issues, we should document the issues considered, how we considered them and the reasons behind the conclusions and findings.

