SP8 – General Insurance Pricing Specialist Principles

Syllabus

for the 2022 exams

SP8 – General Insurance Pricing Specialist Principles

Aim

The aim of this General Insurance Pricing Specialist Principles subject is for students to develop the following skills:

1 understand the main principles and techniques of pricing that are relevant to general insurance, including techniques to estimate the key elements within a technical price.

2 apply these principles in practice within the context of general insurance.

3 understand how pricing links to wider business processes (e.g. business planning, reserving and capital setting).

4 analyse hypothetical scenarios, including using judgement to assess the implications of possible actions and to develop appropriate proposals or recommendations relating to pricing in general insurance business.

Syllabus topics

1 General insurance products and general business environment (20%)

2 Data, risks and risk management (30%)

3 Rating bases and methodology (35%)

4 Credibility, reinsurance and catastrophe modelling (15%)

These weightings are indicative of the approximate balance of the assessment of this subject between the main syllabus topics, averaged over a number of examination sessions.

The weightings also have a correspondence with the amount of learning material underlying each syllabus topic. However, this will also reflect aspects such as:

• the relative complexity of each topic and hence the amount of explanation and support required for it.

• the need to provide thorough foundation understanding on which to build the other objectives.

• the extent of prior knowledge that is expected.

• the degree to which each topic area is more knowledge- or application-based.

Assessment

Exam questions are designed to test the following:

• Knowledge (demonstration of a detailed knowledge and understanding of the topic),

• Application (demonstration of an ability to apply the principles underlying the topic within a given context) and

• Higher Order (demonstration of an ability to perform deeper analysis and assessment of situations. This includes the ability to develop proposals and recommendations utilising actuarial judgement, i.e. taking into account different points of view, comparing and contrasting situations, clearly communicating any limitations and elements of uncertainty in the approach).

In the SP subject exams, the approximate split of assessment across these three skill types is 25% Knowledge, 50% Application and 25% Higher Order skills.

The use of a specific command verb within a syllabus objective does not indicate that this is the only form of question that can be asked on the topic covered by that objective. The Examiners may ask a question on any syllabus topic using any of the agreed command verbs, as are defined in the document 'Command verbs used in the Associate and Fellowship written examinations'.

Detailed syllabus objectives

0 Introduction

0.1 Define the principal terms in use in general insurance.

1 General insurance products and general business environment (20%)

1.1 Describe the main types of general insurance products in terms of:

- the needs of customers.
- the financial and other risks they pose for the general insurer including their capital requirements and possible effect on solvency.

1.2 Describe the main types of reinsurance products for general insurance operations and the purposes for which they may be used.

1.3 Describe the implications of the general business environment in terms of:

- the main features of the general insurance market.
- the effect of different marketing strategies.
- the effect of fiscal regimes.
- the effect of inflation and economic factors.
- the effect of legal, political and social factors.
- the effect of the climate and environmental factors.
- the general effect of professional guidance.
- the impact of technological change.

2 Data, risks and risk management (30%)

2.1 Describe the major areas of risk and uncertainty in general insurance business with respect to pricing, in particular those that may threaten profitability or solvency.

2.2 Describe, with regard to the use of data in pricing:

- the types of data that are used.
- the main uses of data.
- the requirements for a good information system.
- the possible causes of data errors.
- the effects of inadequate data.

2.3 Outline the major actuarial investigations and analyses of experience undertaken with regard to pricing for general insurers.

2.4 Describe the Collective Risk Model and its applications in a general insurance environment. Analyse the derivation of the Aggregate Claim Distribution for the Collective Risk Model and its approximations using stochastic simulation.

3 Rating bases and methodologies (35%)

3.1 Analyse the various components of a general insurance premium.

3.2 Describe the basic methodology used in rating general insurance business.

3.3 Suggest the various factors to consider when setting rates.

3.4 Evaluate appropriate rating bases for general insurance contracts, having regard to:

- underwriting considerations.
- policy conditions such as self-retention limits.
- reinsurance considerations.
- expenses.
- investment.
- capital allocation, return on capital.

3.5 Discuss the burning cost approach to pricing.

    3.5.1 Describe the burning cost approach to rating.

    3.5.2 Determine the assumptions required when using this approach.

    3.5.3 Outline the practical considerations when using this approach.

3.6 Discuss the frequency/severity approach to pricing.

    3.6.1 Describe the frequency/severity approach to rating.

    3.6.2 Determine the assumptions required when using this approach.

    3.6.3 Outline the practical considerations when using this approach.

3.7 Discuss the use of Original Loss Curves in pricing.

    3.7.1 Describe how Original Loss Curves can be used in rating.

    3.7.2 Determine the assumptions required when using this approach.

    3.7.3 Outline the practical considerations when using this approach.

3.8 Understand generalised linear models and multivariate modelling.

    3.8.1 Assess the applications of generalised linear models to the rating of personal lines business and small commercial risks.

    3.8.2 Outline the different types of multivariate models.

    3.8.3 Evaluate the uses of multivariate models in pricing.

4 Credibility, reinsurance and catastrophe modelling (15%)

4.1 Outline the fundamental concepts of credibility theory.

4.2 Describe and compare the Classical and Bayes credibility models.

4.3 Describe the practical applications of credibility models within a general insurance operation.

4.4 Outline the similarities and differences between pricing direct and reinsurance business.

4.5 Describe how to determine appropriate premiums for each of the following types of reinsurance:

- Proportional reinsurance
- Non-proportional reinsurance
- Property catastrophe reinsurance
- Stop loss.

4.6 Describe the data required to determine appropriate premiums for each of the above types of reinsurance.

4.7 Outline the basic structure of a catastrophe model.

4.8 Describe the key perils that can be modelled in a catastrophe model.

5 Solving problems

5.1 Analyse hypothetical examples and scenarios in relation to the financial management of general insurance companies.

    5.1.1 Propose solutions and actions that are appropriate to the given context, with justification where required.

    5.1.2 Suggest possible reasons why certain actions have been chosen.

    5.1.3 Assess the implications of actions within a given scenario.

    5.1.4 Discuss the advantages and disadvantages of suggested actions, taking into account different perspectives.

Assessment

Three-hour and fifteen-minute written examination.

END