Subject ST8
General Insurance: Pricing Specialist Technical

Syllabus

for the 2018 exams

1 June 2017

Subject ST8 – General Insurance: Pricing Specialist Technical

Aim

The aim of this General Insurance Specialist Technical subject is to instil in successful candidates the ability to apply, in simple pricing analysis situations, the mathematical and economic techniques and the principles of actuarial planning and control needed for the operation on sound financial lines of general insurers.

Links to other subjects

Subject CT3 – Probability and Mathematical Statistics: provides a basic grounding in statistics

Subject CT4 – Models: covers some stochastic models used in general insurance.

Subject CT6 – Statistical Methods: covers some of the mathematical methods relevant for general insurance.

Subject CA1 – Actuarial Risk Management: covers the general underlying principles affecting all specialisms.

Subject ST7 – General Insurance: Reserving and Capital Modelling Specialist Technical.

Subject SA3 – General Insurance Specialist Applications: will use the principles of general insurance developed in this subject to develop a deeper understanding of general insurance business and United Kingdom practice.

Objectives

On completion of this subject the candidate will be able to:

(a)   Define the principal terms in use in general insurance.

(b)   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

(c)   Describe the main types of general reinsurance products and the purposes for which they may be used.

(d)   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 the regulatory and fiscal regimes
- the effect of inflation and economic factors
- the effect of legal, political and social factors

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- the effect of the climate and environmental factors
- the general effect of professional guidance
- the impact of technological change

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

(f) With regard to the use of data in pricing:

    (i) Describe the types of data that are used.
    (ii) Describe the main uses of data.
    (iii) Describe the requirements for a good information system.
    (iv) Outline the possible causes of data errors.
    (v) Understand the effects of inadequate data.

(g) Outline the major actuarial investigations and analyses of experience undertaken with regard to pricing for general insurers, including the monitoring of business being written.

(h) (i) Describe the Individual Risk Model and its applications in a general insurance environment.

    (ii) Describe the Collective Risk Model and its applications in a general insurance environment.

    (iii) Understand the derivation of the Aggregate Claim Distribution for the Collective Risk Model, and its approximations using stochastic simulation.

(i) (i) Understand the various components of a general insurance premium.
    (ii) Describe the basic methodology used in rating general insurance business.
    (iii) Appreciate the various factors to consider when setting rates.

(j) Develop appropriate rating bases for general insurance contracts, having regard to:

- return on capital
- underwriting considerations
- reinsurance considerations
- investment
- policy conditions such as self retention limits
- the renewal process
- expenses

(k) (i) Describe the burning cost approach to rating.
    (ii) Understand the assumptions required when using this approach.
    (iii) Outline the practical considerations when using this approach.

(l) (i) Describe the frequency / severity approach to rating.
    (ii) Understand the assumptions required when using this approach.
    (iii) Outline the practical considerations when using this approach.

(m) (i) Describe how Original Loss Curves can be used in rating.
(ii) Understand the assumptions required when using this approach.
(iii) Outline the practical considerations when using this approach.

(n) Understand the applications of Generalised Linear Models to the rating of personal lines business and small commercial risks.

(o) (i) Understand the uses of multivariate models in pricing.
(ii) Outline the different types of multivariate models.

(p) (i) Outline the fundamental concepts of credibility theory.
(ii) Describe and compare the Classical and Bayes credibility models.
(iii) Describe the practical uses of credibility models in a general insurance environment.

(q) (i) Outline the similarities and differences between pricing direct and reinsurance business.

(ii) Describe how to determine appropriate premiums for each of the following types of reinsurance:

- proportional reinsurance
- non-proportional reinsurance
- property catastrophe reinsurance
- stop losses

(iii) Describe the data required to determine appropriate premiums for each of the above types of reinsurance.

(r) (i) Outline the basic structure of a catastrophe model.
(ii) Describe the key perils that can be modelled.

END OF SYLLABUS