

 **ACTEX Learning**

**Mastering SP8:
A Comprehensive Guide to
Fundamental Concepts**

1st Edition

Nishant Oswal



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Actuarial & Financial Risk Resource Materials
Since 1972

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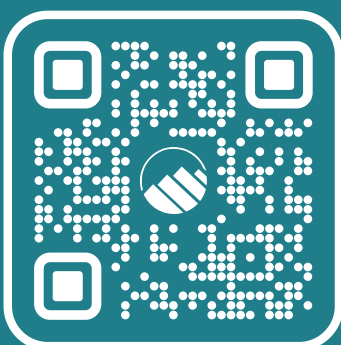
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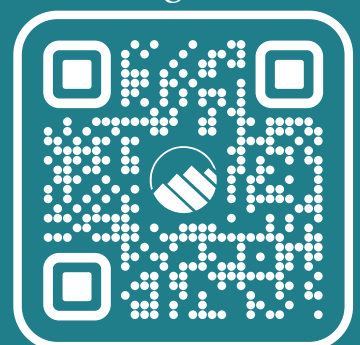
Formula Sheets



Actuarial Exam Tactics



The Actuarial Career:
Getting Started



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2 General Insurance Products

Syllabus Objective: 1.1 - Describe the main types of general insurance products

2.1 Definitions

Act of God	An event that is unexpected and outside of human control
Indemnity	A principle of insurance whereby the insured is restored to the same position as they were before the loss occurred
All Risks	An insurance cover that is not restricted to specific causes of loss
Risk Group	A risk segment into which particular policies are categorized based on risk characteristics
Anti-Selection	A situation where individuals who are at a greater risk of making a claim are more inclined to buy insurance coverage than those with a lower risk
Composite Insurer	A single insurer writing both life and non-life business
Uberrima Fides	The principle of utmost good faith assumed to be observed by both parties of the insurance contract
Suretyship	An insurance to provide for the financial obligations of the insured, if the insured fails to do so
Underinsurance	A situation when the sum insured is lower than the value of contents specified in the insurance contract
Average	In marine insurance, the term means a damage or loss In non-marine insurance, the term means a practice to reduce the claim amount to the extent of underinsurance
Discovery Period	A time limit within which claims must be reported to the insurer
Deductible	<p>An amount that the insured must pay before the insurer starts to pay. It is the amount that is deducted from the claim amount & has to be borne by the insured. A deductible reduces the maximum payout For example, if a policy has a sum insured of \$500 and a deductible of \$50:</p> <ul style="list-style-type: none"> • If the loss incurred amounts to \$400, the insurer would pay out \$350 • If the loss incurred amounts to \$600, the insurer would pay out \$450 (Sum Insured - Deductible)

Excess	<p>An amount that the insured must bear before any liability falls on the insurer. An excess does not reduce the maximum payout. For example, if a policy has a sum insured of \$500 and an excess of \$50:</p> <ul style="list-style-type: none">• If the loss incurred amounts to \$400, the insurer would pay out \$350• If the loss incurred amounts to \$600, the insurer would pay out \$500
First Loss	<p>An insurance coverage where the sum insured is less than the value of contents, but the principle of average would not be applied. The insured bears any loss in excess of the sum insured</p>
Salvage	<p>The amount recovered from the sale of the insured items that became the property of the insurer by the virtue of settling the claim</p>
Subrogation	<p>A principle that applies when the insurer, after paying a claim to the insured, assumes the insured's legal rights to recover the amount from a third party</p>
Recoveries	<p>The amount received to offset the cost of a claim. It can be from reinsurers, other insurers, salvage, or subrogation</p>
Cancellation	<p>A cessation of the policy, which may involve partial return of premiums</p>
Lapse	<p>A policy that, when invited to renew, does not do so</p>
Endorsement	<p>An amendment made to a policy to modify its terms, coverage, or conditions due to a change in the underlying risk</p>
Underwriting	<p>A process of assessing whether the risk is acceptable and, if so, determining the appropriate premium with the terms and conditions of the cover</p>
Inception Date	<p>A date from which the insurer assumes cover for an insured risk</p>
Expiry Date	<p>A date on which insurance cover for a risk ceases</p>
Claims Made Policy	<p>A policy that covers all claims reported to an insurer within the policy period irrespective of when the loss occurred</p>
Loss-Occurring Policy	<p>A policy that covers all losses that occurred within the policy period irrespective of when the loss is reported</p>

Risk Attaching Policy	A basis under which reinsurance is provided for claims arising from policies commencing during the period to which the reinsurance relates
Actual Total Loss	A form of total loss defined by the Marine Insurance Act. A loss that occurs when the insured property is completely destroyed
Constructive Total Loss	A form of loss defined by the Marine Insurance Act. In this situation, the property is largely damaged such that the cost of preventing the total loss exceeds the value saved
Deposit Premium	This occurs in cases where all relevant exposure or rating information is not known at the start of the period of cover, or the premium to be paid is dependent on the claims experience during the policy term
Adjustment Premium	The adjustment premium is an additional premium payable at the end of a period of cover
Claim Amount Distribution	A statistical distribution describing the total amount of claims
Claim Cost Inflation	The gradual increase in the cost of identical claim payments
Claim Frequency	The number of claims in a period per unit of exposure
Claim Frequency Distribution	A statistical distribution describing the claim frequency
Latent Claims	Claims that result from perils that the insurer is unaware of at the time of writing a policy, and for which the potential for claims to be made many years later has not been appreciated
NIL Claims	A claim that results in no payment by the insurer
Probable Maximum Losses (PML)/ Expected Maximum Loss (EML)	An estimated largest loss expected to arise from a single event in respect of an insured property
Clash Cover	Excess of loss cover for liability business, limiting insurers' exposure to the risk that one event gives rise to claims on more than one policy
Escalation Clause	A clause that permits the insurer to raise the level of benefits or sum insured (and the premium) in line with some inflation index
Hours Clause	A clause within a catastrophe reinsurance treaty that specifies the limited period during which claims can be aggregated for the purpose of one claim on the reinsurance contract

Replacement/Old for New	A basis of cover under which the insurer pays the cost of replacing the insured item with a similar but new item
Fleet	A group of vehicles, ships, or aircraft insured together under one policy
Fleet Rating	A process of determining premium rates for fleets
Underwriting Factor	Any factor that is used to determine the premium, or terms and conditions for a policy

2.2 Concepts

Criteria for Insurable Risk	<p>For a risk to be insurable, the following criteria need to be met:</p> <ul style="list-style-type: none"> • The policyholder must have an interest in the risk being insured • A risk must be of a financial and reasonably quantifiable nature • The claim amount must bear some relationship with financial loss incurred • Individual risk events should be independent of each other • The probability of the event should be relatively small • A large number of similar risks should be pooled to reduce the variance and hence achieve more certainty • There should be an overall limit on the risks taken by the insurer • Moral hazards should be eliminated as far as possible • There should be sufficient data for the insurer to estimate the extent and likelihood of the risk
Policy Document	<p>The policy document sets out the terms and conditions under which the insurer is liable to pay claims. Common items on the policy document include:</p> <ul style="list-style-type: none"> • details of the vehicle/property • excess applied • limits to cover • exclusions • time limits • optional covers in the policy • details of premiums paid

Exclusions	Exclusions are clauses that limit the circumstances in which a claim may be made. Examples include losses caused by terrorism, depreciation to a motor vehicle, etc.
Claim Characteristics	<p>Claim characteristics refer to the ways in which, and the speed with which, claims originate, are notified, settled, paid, and, in some cases, reopened. Claim characteristics are defined by the:</p> <ul style="list-style-type: none">• frequency of claim• severity of claim• claim inflation• delay patterns (e.g., reporting & settlement delays)• accumulation of risk• variability of experience• fraudulent claims
Risk & Rating Factors	<p>A risk factor is any characteristic or measure that has an influence on the likelihood or severity of a claim. For example, for motor insurance, the skills of the driver directly affect the likelihood of a claim.</p> <p>Rating factors are the proxies of risk factors used in the pricing model to determine an appropriate risk premium for a policy. In the above example, it is very difficult to quantify the skills of the driver, hence the experience of the driver can be used as a rating factor.</p>
Basis of Cover	<p>An insurance cover may be written on two basis/policies:</p> <ul style="list-style-type: none">• loss-occurring policies• claims-made policies
Perils	Perils are events that may cause a loss. In virtually all types of insurance, it would be difficult to list all possible perils against which a policyholder might wish to be protected. Claims can result from a very large number of perils; not all of them will be currently apparent, and not all of them will be standard to every insurance product on the market. Examples of perils are theft, earthquake, etc.
Measures of Exposure	Measures that are used to quantify the level of risk underlying an insurance coverage. It is important to choose an appropriate measure of exposure. For example, in motor third-party insurance, vehicle-year is used as a measure of exposure.

Non-Independence of Exposures

The variability is increased where exposures are not independent, as this can lead to an accumulation of risk. For example, if the majority of policyholders in a household insurance portfolio live in a certain area of the country, there will be a disproportionate claim cost if there is a local catastrophe. If the book has exposures spread across the country (and so more independent geographically), the claim cost will not be affected so greatly by a local catastrophe.

Capital Requirements

The excess of the value of the assets over the value of the liabilities is known as the capital or solvency margin of the company. The amount of capital held is subject to minimum requirements if a company is to be allowed to continue to trade. These requirements are laid down in legislation that varies from one country to another, although all countries in the EU have a common minimum solvency regime.

Types of Lines of Business

The range of general insurance products is very wide. The following sections provide an idea of different GI products. There are four main types of GI covers under which products are subcategorized. They are:

- Liability Insurance
- Property Insurance
- Financial Loss Insurance
- Fixed Benefits Insurance

Products – Liability Insurance

Employers' Liability

Benefits/Cover – Indemnifies the insured against legal liability to compensate an employee or their estate for bodily injury, disease, or death suffered due to the negligence of the employer, in the course of employment. In many countries, this is a compulsory cover.

Insured Perils – Common perils include:

- accidents caused by the negligence of the employer
- exposure to harmful substances
- exposure to harmful working conditions

Basis for Cover – Loss-occurring basis

Measure of Exposure – Payroll, or total wage and salary costs

Risk/Rating Factors – A few of the risk factors are:

- type of occupation
- location of the workforce
- exposure and claims experience
- frequency of visitors to the site
- materials handled

Motor Third-Party Liability

Benefits/Cover – Indemnifies the insured against compensation payable to third parties for personal injury or damage to their property caused by the insured's motor vehicle. In most countries, this is a compulsory cover.

Insured Perils – Common perils include:

- property damage of third parties
- bodily injury to third parties caused by the insured

Basis for Cover – Loss-occurring basis

Measure of Exposure – Vehicle-year

Risk/Rating Factors – A few of the risk factors are:

- experience of the driver
- make/model of the vehicle
- safety features of the vehicle
- postcode/location

Marine & Aviation Liability

Benefits/Cover – Indemnifies the insured against the legal liability to compensate a third party for bodily injury, death, or damage to property arising out of the operation of a vessel/aircraft.

Insured Perils – Common perils include:

- loss/damage to passengers' property caused by the vessel or aircraft
- bodily injury of the passengers on the aircraft/vessel

Basis for Cover – Loss-occurring basis

Measure of Exposure – Passenger kilometres, passenger voyages, in-service seats, in-service aircraft

Risk/Rating Factors A few of the risk factors are:

- loss experience
- type of craft/vessel
- geographic region of operations
- use of the aircraft or vessel
- commercial category of the craft/vessel

Public Liability

Benefits/Cover – Indemnifies the insured against legal liability to compensate a third party for property damage or bodily injury, other than those covered by other liability insurance.

Insured Perils – Perils would be based on the exact type of policy

Basis for Cover – Loss-occurring basis/claims-made basis

Measure of Exposure – Turnover

Risk/Rating Factors – Risk factors would be based on the exact type of policy and cover provided.

Product Liability

Benefits/Cover – Indemnifies the insured against legal liability to compensate a third party for bodily injury or property damage resulting from a product fault.

Insured Perils – Common perils include:

- faulty design
- faulty manufacture
- faulty packaging
- misleading instructions

Basis for Cover – Claims-made basis

Measure of Exposure – Turnover

Risk/Rating Factors – A few of the risk factors are:

- distribution channel of the product
- its usage
- type of the product
- region of sales and manufacturing

Professional Indemnity and E&O Liability

Benefits/Cover – Indemnifies the insured against legal liability to compensate a client/customer for losses resulting from negligence in provision of a professional service. It is also known as Errors & Omissions Liability.

Insured Perils – Common perils include:

- wrong medical diagnosis
- error in medical operation
- error in an actuarial report

Basis for Cover – Claims-made basis

Measure of Exposure – Turnover

Risk/Rating Factors – A few of the risk factors are:

- type of professional service
- size of the professional firm
- experience of the professionals

Directors' and Officers' Liability

Benefits/Cover – Indemnifies the insured against legal liability to compensate a third party for losses resulting from wrongful act of the insured in their capacity as a director or officer of a company.

Insured Perils – Common perils include:

- allowing a company to continue operations when it should have been declared insolvent
- any act resulting in the insured being declared unfit for the role
- publishing false financial statements

Basis for Cover – Claims-made basis

Measure of Exposure – Turnover

Risk/Rating Factors – A few of the risk factors are:

- nature of the company
- skills/experience of the directors

**Environmental and
Pollution Liability**

Benefits/Cover – Indemnifies the insured against legal liability to compensate third parties for losses resulting from unintentional pollution for which the insured is deemed responsible.

Insured Perils – Any incident causing gradual or sudden environmental pollution.

Basis for Cover – Claims-made basis

Measure of Exposure – The measure would depend on the nature of the industry in which the insured operates.

Risk/Rating Factors – A few of the risk factors are:

- the processes carried out by the insured
- likely effects of an accident
- likely cost of clean up

Products – Property Insurance

Residential Building

Benefits/Cover – Indemnifies the insured against loss incurred to residential property due to fire/theft or other perils. The amount paid under the policy is usually the amount needed to restore it to its previous condition, subject to any excess or deductible.

Insured Perils – Common perils include:

- fire
- theft
- explosion
- lightning
- storm & flood
- subsidence

Basis for Cover – Losses occurring basis

Measure of Exposure – Sum Insured-years

Risk/Rating Factors – A few of the risk factors are:

- sum insured
- number of rooms
- location
- voluntary/compulsory excess
- use of the property
- owned/rented property
- age of the building

Commercial Building

Benefits/Cover – Indemnifies the insured against loss incurred to commercial property due to fire/theft or other perils. The amount paid under the policy is usually the amount needed to restore it to its previous condition, subject to any excess or deductible/first loss. It is often called as “fire insurance”.

Insured Perils – Common perils include:

- fire
- theft
- explosion
- lightning
- storm & flood
- subsidence

Basis for Cover – Losses occurring basis

Measure of Exposure – Sum Insured-years

Risk/Rating Factors – A few of the risk factors are:

- estimated maximum loss (EML/PML)
- age of building
- fire protection equipment
- construction type
- location of the building
- hazardous materials

Moveable Property

Benefits/Cover – Indemnifies the insured against loss incurred to household contents due to fire/theft or other perils. This type of cover could be an extension of residential property cover. The claim paid could be based on “replacement value” or “new for old” basis.

Insured Perils – Common perils include:

- fire
- theft
- damage from weather events
- malicious damage

Basis for Cover – Losses occurring basis

Measure of Exposure – Sum Insured-years

Risk/Rating Factors – Risk factors are the same as for residential property insurance

Motor Property

Benefits/Cover – Indemnifies the insured against liabilities arising out of damage to motor vehicle of third party due to fire/theft or damage to insured’s own vehicle.

Insured Perils – Common perils include:

- fire
- theft
- accidental/malicious damage

Basis for Cover – Losses occurring basis

Measure of Exposure – Vehicle-years

Risk/Rating Factors – A few of the risk factors are:

- the number of miles driven
- density of traffic where car is driven
- ability of driver
- speed at which vehicle is driven
- ease with which vehicle can be damaged
- theft risk

Marine & Air Craft

Benefits/Cover – Indemnifies the insured against loss of/damage to aircraft, ship vessel and its contents. The extent of loss is defined in the Marine Insurance Act.

Insured Perils – Common perils include:

- perils of the sea
- fire
- explosion
- jettison
- piracy
- sinking

Basis for Cover – Losses occurring basis

Measure of Exposure – Sum Insured

Risk/Rating Factors – A few of the risk factors are:

- size, type and age of craft/cargo
- nature of the cargo
- nature of contents of the cargo

Goods in Transit

Benefits/Cover – Indemnifies the insured against loss incurred to good under transit due to various perils. Specific type of cover can exist for example, relating to specie, fine art, jewellery, and so on.

Insured Perils – Common perils include:

- damage
- theft
- loss

Basis for Cover – Losses occurring basis

Measure of Exposure – Consignment value

Risk/Rating Factors – A few of the risk factors are:

- mode of transport
- nature of goods
- type of storage used
- time-period of transit
- length of time spent at warehouse

Construction and Engineering**Plant & Machinery Liability**

Benefits/Cover – Large construction and engineering projects can take up to five years (or longer), and the associated policies will last until the end of the project. Since projects often overrun their schedules, the policies are usually extendible. A policy for a large project may continue for some years after its completion to cover the late discovery of construction faults.

Insured Perils – Common perils include:

- damage
- destruction
- design effect
- faulty parts
- failure to finish the project

Basis for Cover – Losses occurring basis

Measure of Exposure – Value of the contract

Risk/Rating Factors – A few of the risk factors are:

- type of project
- term of project
- contracting firm
- materials and technologies used
- location of the project

Extended Warranty

Benefits/Cover – Extended warranty insurance covers losses arising from the need to replace or repair faulty parts in a product (usually electrical goods, furniture or motor vehicles) beyond the manufacturer's normal warranty period. Policies may have a term of several years.

Insured Perils – The main peril is default in manufacturing

Basis for Cover – Losses occurring basis

Measure of Exposure – Appliance-years

Risk/Rating Factors – A few of the risk factors are:

- make/model of the item covered
- length of manufacturer's guarantee
- term of the warranty

Products – Financial Loss Insurance

Fidelity Guarantee

Benefits/Cover – Fidelity guarantee covers the insured against financial losses caused by dishonest actions of its employees (fraud or embezzlement).

Insured Perils – The main peril is dishonest action by employees

Basis for Cover – Losses occurring basis

Measure of Exposure – Depend on exact cover provided

Credit Insurance

Benefits/Cover – Indemnifies the insured against the losses incurred due to their debtors not fulfilling their financial obligations. Two main types of this are trade credit and mortgage indemnity.

Insured Perils – The main peril is failure of the third parties to fulfil obligations

Basis for Cover – Losses occurring basis

Measure of Exposure – Excess of amount of loan over a certain percentage of the value of the property

Creditor Insurance

Benefits/Cover – Indemnifies the insured who have certain financial obligations but cannot fulfil them due to disability or unemployment.

Insured Perils – The main peril is accident/disability/unemployment resulting in loss of income of the insured

Basis for Cover – Losses occurring basis

Measure of Exposure – Amount of loan

Business Interruption Cover

Benefits/Cover – Indemnifies the insured against losses made as a result of not being able to conduct business.

Insured Perils – The main peril is fire at insured's property/- fire at neighbouring places

Basis for Cover – Losses occurring basis

Measure of Exposure – Turnover

Legal Expense Cover

Benefits/Cover – This insurance product covers the insured against legal expenses incurred as a result of legal proceeding against the insured.

Insured Perils – The main peril is legal proceedings against the insured

Basis for Cover – Losses occurring basis, could also be claims-made basis

Measure of Exposure – Policyholder-years

Products – Fixed Benefits

Personal Accident Cover

Benefits/Cover – Benefits are usually specified fixed amounts if an insured party (this may include the policyholder's family as well as the policyholder) suffers the loss of one or more limbs or other specified injury, or accidental death. This is not indemnity insurance because it is not possible to quantify the value of the loss, for instance, of an arm.

Insured Perils – The main peril is any form of accident that results in specified injury

Basis for Cover Losses occurring basis

Measure of Exposure Sum insured

Risk/Rating Factors Some of the risk factors are:

- age
- gender
- hazardous hobbies

Package Policies

Different insurance products can often be combined and provided under one policy. Few examples of such combined policies are:

- Motor liability and property damage cover under one policy
- Household policies are often sold as package, covering both buildings and contents
- Small businesses are conventionally covered by package' policies, which include buildings, contents and liability insurance. They may also include business interruption
- Construction risks are typically insured under a contractors' all risks (CAR) policy. This will include the contractor's liability for losses caused to third parties.

Cyber Risks

Cyber risk is an emerging risk and provide an opportunity for development of cyber insurance. The insurer will indemnify the insured against losses incurred as a result of a specified cyber or data loss event. This may include legal expenses.

Common perils for cyber insurance would be virus damage, hacker attack, infringement of IP, libel, identity fraud, privacy issues, loss relating to breaches.