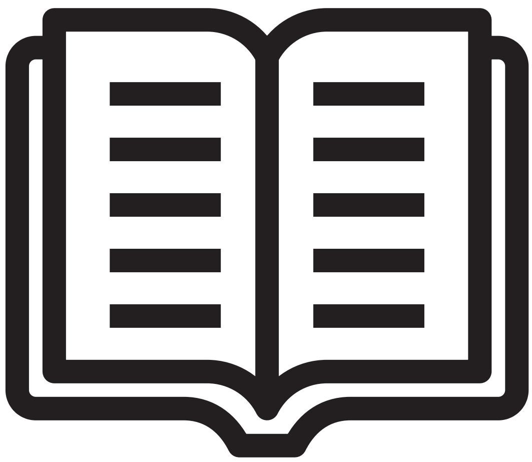
ACTEX Learning

Mastering CP3: A Comprehensive Guide with Exam Analysis and Strategies

1st Edition

Anoushka Kothari, FIA, FIAI



Communications Practice, An IFoA & IAI Exam

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Introduction

Hello and welcome to the Core Practices CP3 book!

Actuaries spend years mastering complex mathematical models, risk assessments, and financial projections, but as many soon realise, technical expertise alone is not enough. The real challenge and the opportunity lies in explaining these concepts to people who do not have the same technical background. What may seem like every-day terminology to you can be jargon to others. Understanding your audience is the key to identifying jargon and avoiding it and to ensure that your message is accessible and impactful. Whether it is leaders, clients, regulators, or colleagues from other fields, actuaries must communicate their insights in a way that is understandable, clear, compelling, and actionable.

This skill becomes even more important as actuaries progress in their careers. Initially, they may focus on calculations and analysis, but over time, they find themselves in meetings, giving presentations, and advising key decision-makers. The ability to break down complex actuarial ideas without losing their essence is what separates good actuaries from great ones.

One of the reasons students find the CP3 exam challenging is the need to translate technical actuarial concepts into clear, understandable explanations while also filtering out unnecessary information. A common mistake is assuming that everything they know is relevant to the audience when, in reality, some details may be unnecessary or even overwhelming. Identifying what truly matters and cutting down excess information is a key part of effective communication. But don't worry, through practice, you can develop these skills and approach the exam with confidence.

This book is designed to help you prepare for the CP3 exam of both the **Institute of Actuaries of India (IAI)** and the **Institute and Faculty of Actuaries (IFoA)**. It includes detailed breakdowns of past exam questions, offering alternative approaches (where applicable), to help reinforce key principles. The techniques covered here can also be applied to other case studies you encounter while studying. In addition, you will find an original exam paper to test your understanding, followed by a comprehensive solution guide. I also included an Exam Tips section, sharing the insights I gained while preparing for this subject to make this book as practical and helpful as possible. Along the way, you will discover additional insights and discussions that will further enhance your learning.

Good communication is not just a nice-to-have skill – it is a necessity. For actuaries, mastering it can make all the difference.

Whether you are studying CP3 for the first time or re-attempting the exam, I hope that you find this book valuable and that it helps you on your journey. By the time you finish, I believe that you will be equipped with the tools and strategies needed to tackle CP3 with confidence.

Let us get started!

Know Your Author

Anoushka Kothari, FIA, FIAI is a qualified actuary based in India, with four years of industry experience in the life insurance actuarial domain. Throughout her career, she has worked with stakeholders from the US, the UK, and other Asian countries, gaining first-hand insight into how actuarial concepts are communicated across different markets and professional settings.

She has been associated with ACTEX Learning for some time now and has curated CM1 and CM2 paper B formula sheets. Passionate about bridging the gap between technical expertise and effective communication, she understands the challenges that actuarial students face, especially when preparing for CP3. Having navigated this journey herself, she brings a practical, experience-driven approach to this book.

Connect with her on LinkedIn or email her at anoushkakothari21@gmail.com.

Contents

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Chapter 1

Suggested Blueprint of the Paper

This blueprint is a suggested split of the total marks for this exam compiled from various examiners' reports. The blueprint marks are not fixed and can vary across different exam sessions and across IFoA and IAI. They should not be relied upon as strict scoring guidelines but rather as a reference to understand the key areas being assessed in the CP3 exam. So, please use them to understand what is being assessed in the CP3 exam and the importance of certain items over the rest.

Clearly addressed to – in first line or header of the paper	1
Suitable title of the paper mentioning keywords	1
Date	0.5
Clear mention of who is the Author (from company or personally but make sure clear in what capacity you are signing off)	0.5
Logical order between sections	2
Logical order of points within each section	3
Points within each section are directly relevant to the heading	1
Appropriate short headings on each section	2
Sentences kept brief	2
Presentation, clear, logical visual aids	5
Overall language is simple and easily understood by the audience	5
Professional tone of the language	1
Avoid colloquialisms, informal and/or emotive language	1
Absence of jargons or technical terms suitable for your audience	4
Superfluous accuracy of numbers (such as too many decimal places) is avoided	3
Absence of irrelevant points of content	5
Content	35
Audience is completely satisfied with the response and the responder has made a good impression	8
Reflective questions	20

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Chapter 3

Institute of Actuaries of India — May 2024

3.1 Exam Paper

The ***Indian economy***[i] is eyed globally for the potential it carries, and with the ***"Insurance for all"*** vision, targeted to be achieved by 2047, there are ***tremendous growth opportunities*** across the sector. Many investors want to capitalise upon the potential growth of this sector and are keen on acquiring a stake in the existing insurance firms, hence the market is witnessing an increase in Merger & Acquisition activities.

The ***Chairman of XYZ Capital*** is keen on purchasing a ***10% stake in ABC Health*** Insurance Company and has asked his ***Transaction Head*** for a ***high-level due diligence report*** on the ***company's reserves and solvency position***. ***You are a practising consultant*** running your independent actuarial firm, and the Transaction Head has appointed you to conduct this exercise.

Question 1

Based on the information available to you about the company, you need to draft a short report for the Transaction Head (800 to 1000 words), highlighting the key findings of your analysis. Extract for preparation of your report is shared below.

[90 marks]

Question 2

While drafting your response above, what are some of the terms you considered as jargon and left out of your reply or explained in detail/simple language so that a non-actuarial/non-technical person can understand them?

[5 marks]

Question 3

Given that the Transaction Head has asked you to prepare a summarised report, one way to make your communication effective is by leaving out some information which may not be relevant for the purpose of discussion. Explain what information you considered as irrelevant and did not use in the note.

[5 marks]

[i] In Chapters 3–5, key phrases from the question paper are highlighted in bold and italic by the author to help candidates focus on essential concepts.

3.2 Scenario Material

Extract of high-level information for preparation of report (please note that the information provided below has been created for the purpose of this examination and is fictitious with no reference to any company or individual) is provided below.

Financial Year 2023 refers to the period from January 1, 2023 to December 31, 2023. Similar definitions apply for previous financial years, i.e., FY 2022 and FY 2021.

1. Post the COVID-19 pandemic, the health insurance industry is ***witnessing a boom globally*** as people are becoming more aware of the ***importance of health insurance*** which provides financial security to the family of the insured impacted by any illness or disease.

2. ABC Health Insurance is one of the ***leading stand-alone health*** insurance companies in India with a ***market share of 4.7%*** of the total health insurance industry in Financial Year 2023 (FY 2023). The company has been in existence for ***14 years*** in the Indian market since its inception in 2010.

3. The company's management is spearheaded by the CEO, Mr. Bulgaria, who has been holding this position for the last 5 years. The company's ***key management personnel saw a significant change in 2023*** with the appointment of:

   (a) Mr. Austria as the Chief Financial Officer – He has over 20 years of experience holding senior-level positions at two of the largest non-life insurers. He is known to be a very sharp and blunt person with good control over the financial management of the company.

   (b) Ms. Greece as the Chief Investment Officer – She carries over two decades of experience in the financial markets, and it's her first stint with an insurance firm. She is razor-sharp and leverages the market dynamics well to maximise returns on large-size portfolios.

   (c) Ms. Ireland as the Appointed Actuary in 2023 – She has a total experience of 15 years with 7 years of post-qualification experience. She is known for her innovative contributions to the industry in the area of product design and business strategy. She also has good control over reserve and solvency management and has a good reputation in the market.

   These sharp hires from the market have ***created a lot of buzz*** as the change in management is ***expected to bring in changes*** to the policies and processes of running the business.

4. The non-life industry's gross written premium (GWP) grew at 16%, and ***stand-alone health insurance players grew at 33% in FY 2023***. The company (i.e., ABC Health Insurance) gross written premium grew at ***27% in FY 2023***, with the split by line of business illustrated in the table below:

Table 1: Gross Written Premium (in Crores)					
Line of Business	**2021**	**2022**	**2023**	**Growth 2021-22**	**Growth 2022-23**
Indemnity	2,500	3,000	3,800	20%	27%
Personal Accident	45	53	63	18%	19%
Travel	2.5	3	4.5	20%	50%
Total	**2,548**	**3,056**	**3,868**	**20%**	**27%**

(a) The company primarily ***sells Indemnity products, i.e., 98% of the total*** portfolio with personal accident and travel constituting the remaining 2%. ***Indemnity products are those which cover the medical expenses of the insured*** – inpatient and outpatient costs. Personal accident provides financial indemnity to the Insured's beneficiary in case of accidental death, and travel insurance covers the medical expenses of the insured incurred during travel – domestic and international.

(b) Within the indemnity product, the company ***sells 65% of its business to retail*** customers via ***aggregator*** platforms, ***direct sales forces, and agents***, while group business is primarily sold by corporate agents/brokers or the company's direct sales force.

(c) The indemnity products offered by the company cover the insured for a ***period of 1 year*** only and are renewable every year at the then-prevailing premium rates. The ***premium rates vary by the age and the coverage options*** selected by the insured.

(d) The company has launched many ***sales campaigns*** through social and ***digital media*** to strengthen its brand among the customers in order to increase its premium volume.

5. Business Retention:

(a) Net written premium is defined as the Gross Written Premium minus the Premium ceded to the reinsurer.

(b) The company has ***reinsured 20%*** of its portfolio with reinsurers rated A and above.

(c) The company has entered into a ***proportional quota share*** arrangement with the reinsurer.

Table 2: Net Written Premium (in Crores)					
Line of Business	**2021**	**2022**	**2023**	**Growth 2021-22**	**Growth 2022-23**
Indemnity	2,000	2,400	3,040	20%	27%
PA	36	42	50	18%	19%
Travel	2	2	4	20%	50%
Total	**2,038**	**2,445**	**3,094**	**20%**	**27%**

6. The company ***writes more business in the second half of the year***, which is reflected in the Earned Premium for the financial year.

Table 3: Net Earned Premium (in Crores)					
Line of Business	**2021**	**2022**	**2023**	**Growth 2021-22**	**Growth 2022-23**
Indemnity	1,798	2,124	2,662	20%	27%
PA	33	38	46	18%	19%
Travel	2	2	3	20%	50%
Total	**1,833**	**2,164**	**2,710**	**20%**	**27%**

7. The company's ***expense ratio*** as a percentage of gross written premium stands at ***25% in FY 2023***, reporting a ***drop*** from FY 2022 and illustrating ***efficiencies in expense management***. The average expense ratio for ***other stand-alone health insurers*** stood at ***26%*** in FY 2023, indicating better expense management against other stand-alone players in the market.

   (a) The company's major proportion of the expenses are spent on meeting the salaries of its employees, which is approximately 65%.

   (b) Marketing and advertising spends constitute approximately 15% of the expenses incurred by the company.

   (c) The remaining is spent on travel, printing and stationery, legal and professional charges, and others.

Table 4: Expense as a % of Gross Written Premium			
Financial Year	**2021**	**2022**	**2023**
Expense Ratio	28%	26%	25%

8. The company's ***commission ratio*** as a percentage of gross written premium stands at 6.5% in FY 2023, which is ***in line with the industry average of 6%*** for other stand-alone health insurers. The company's commission ratio has ***improved*** on account of moving to ***direct selling channels***, thereby reducing the commission payouts.

   (a) The company has ***good relationships*** with its ***corporate agents/brokers***, and offers them ***high payouts*** to ensure high business volumes.

   (b) The company also has ***strong*** reinsurance partnerships, giving it payouts as ***reinsurance commission***.

Table 5: Gross Commission as a % of Gross Written Premium			
Financial Year	**2021**	**2022**	**2023**
Commission Ratio	7%	8%	6.5%

9. The reserve profile of the company is illustrated in the table below:

Table 6: Net Reserves Reported			
Financial Year	**2021**	**2022**	**2023**
Net Unearned Premium Reserve	1,223	1,504	1,887
Net Outstanding Claims Reserve	385	454	341
Net Incurred but Not Reported Reserve	165	195	146
Net Premium Deficiency Reserve	-	-	-

   (a) The company writes higher volumes of business in the second half of the year, and this is reflected in the unearned premium reserves booked by the company, which are set on a straight-line basis.

   (b) The ***outstanding claims reserve set by the company are based on the full reported claims amount*** to the company. However, the experience has shown that ***only 70% of the money is utilised to settle*** those outstanding claims. ***Recently, the company aligned*** the outstanding claims reserve policy to its actual experience to allow for the impact of final settlement amounts ***so that reserves are not set on the prudent side***. This is ***visible in the reduction of the outstanding claims reserve*** as a percentage of the net earned premium which has dropped from 21% in FY 2021 to 13% in FY 2023. While the prior approach was prudent of keeping the full reported amounts, the second approach is based on the actual experience and hence ***needs close monitoring***.

   (c) The incurred but not reported (IBNR) reserves are calculated using the chain ladder method, the Bornhuetter-Ferguson method, and the loss ratio method on paid and incurred triangles. It is also observed that the company has ***optimised its IBNR*** as it shows a reduction from 9% of the net earned premium in FY 2021 to 5% in FY 2023. This appears to be ***significantly lower than industry benchmarks***, which lie between 8% to 15%.

   (d) It appears that the ***company has optimised both outstanding and IBNR reserves, which has resulted in profits in FY 2023***.

10. The net incurred claims as a percentage of the net earned premiums are illustrated in the table below:

Table 7: Net Incurred Claims as a % of Net Earned Premium			
Financial Year	**2021**	**2022**	**2023**
Claims Ratio	64%	66%	55%

   (a) Net Incurred Claims = Claims Paid + Change in Reserves. The claims paid proportion over the years has not changed much, i.e., it remained at 61% of the net earned premiums for the last two years.

   (b) We observe ***a significant drop in the claims ratio, which is on account of the drop in reserves*** as explained above.

   (c) There have been no changes in the claim settlement processes set by the company, i.e., there has been no reduction in claim reporting or claim payment period.

11. Because of the above reported changes, it is observed that the company turned profitable in FY 2023 while reporting a marginal underwriting profit of INR 4 Crores.
12. The ***investment return*** of the company in FY 2023 stands at approximately 7% which is a ***little below the industry average*** of approximately 7.8%, thereby providing scope for making better investment choices for the company.
13. The company's ***solvency ratio stands at 174% in FY 2023, which is above the regulatory requirement of 150%.***
    (a) However, this is ***sustained on account of additional capital of INR 150 Crores, which was pumped in FY 2022*** to help the company sustain its solvency position. In case this capital was not injected by the shareholders, the solvency ratio of the company would have marginally met the regulatory requirement of 150%.
    (b) Also, the ***inadmissible assets*** which do not contribute to the Available Solvency capital have ***increased in the last two years*** on account of an increase in receivables greater than 180 days, ***resulting in a lowering of the available capital***.

Table 8: Solvency Ratio

Financial Year	**2021**	**2022**	**2023**
Required Solvency Capital	400	480	608
Available Solvency Capital	877	873	1,056
Solvency Ratio	219%	182%	174%

    (c) As a major step to ***transition towards the risk-based capital***, the regulator had initiated a ***Quantitative Impact Study*** to analyse the impact of the model on the capital and solvency position of each insurance company. The ***results of this exercise illustrated a drop in solvency ratio across the insurers***, which is illustrated in the table below:

Table 9: Impact Assessment Solvency Ratio as at December 31, 2023

Company	**ABC Health Insurance**	**Other Stand-alone Health Insurers**	**Overall Insurance Market**
Solvency Ratio – Existing Methodology	174%	212%	183%
Solvency Ratio – Risk Based Capital Approach	155%	189%	163%

- While it is observed that the Solvency ratio for all the players in the market dropped under the Risk Based approach, the companies are still well capitalised to meet the regulatory requirement of 150%.
- The ***solvency ratio for ABC Health Insurance is way below other stand-alone health*** insurers, i.e., 174% vs. 212%. The ***impact of the risk-based approach is more pronounced*** on the other stand-alone health insurers, i.e., a drop of 23% vs. a drop of 19% for ABC Health Insurance.

At an ***overall*** level, while the company is one of the oldest stand-alone health insurers in the market, the company is ***putting in concerted efforts*** to drive efficiencies across all its domains, i.e., expense management, claims management, sales enhancement through different channels, and many other initiatives to make this venture the insurer of choice for both policyholders and shareholders.

It is believed that the ***change in management has been a strategic move*** to bring in the above-mentioned efficiencies to improve the top line and bottom line. The company has ***aggressive growth plans for FY 2024*** and projects to grow at 35% in order to increase its market share.

The company ***plans to reprice some of its marquee products*** to allow for the reduced claims and expense ratio thereby making it ***competitive*** in the market. Management believes this will add volume and increase both the top line and bottom line.

The company ***had not reported any regulatory*** issues in the past and has a good reputation in the market.

3.3 Solutions with Explanation

The official solution is given in *italics*, and explanations in blue.

Solution to Question 1:

> ***Subject:*** *Current State Assessment of ABC Health Insurance Company's Reserves and Solvency position*
>
> *Dear Mr. Transaction Head,*
>
> *Thank you for providing me the opportunity to conduct a high-level review on ABC Health Insurance Company's reserves and solvency position. The report below illustrates the key findings on the subject.*

This assumes that we are sending the report via email/letter and we demonstrate the understanding of whom the report is addressed to and set the scene of what would be covered.

We are required to give a short title for the report. This title captures the company name, what we are trying to highlight in the report. Since the question asks to "highlight the key findings" and here, according to the independent consultant (You), key findings are on reserves and solvency position, the title mentions it. You could have used other titles as per the body of your report, keeping in mind to be clear and concise.

Company background

> *ABC Health Insurance Company has been in operation for the last 14 years with a market share of 4.7% of the total health insurance industry. The company is spearheaded by the CEO, Mr. Bulgaria, who has been with the company for the last 5 years. The company's senior management saw a significant change in 2023 with some sharp hires from the financial markets:*
>
> - *Mr. Austria as the Chief Financial Officer with rich industry experience of over 20 years.*

- *Ms. Greece as the Chief Investment Officer with experience of over 20 years in the financial markets.*
- *Ms. Ireland as the Appointed Actuary with over 15 years of industry experience.*

A good way to write a CP3 paper is by structuring your answers into sections. This report is divided into five sections, each with an appropriate heading.

This paragraph covers the company's background, as the writer is submitting a report for its acquisition. Addressed to the Transaction Head – who likely reviews multiple such reports, it provides a brief overview of key management personnel and market share. The content is drawn from Points 1, 2, and 3 of the given extract, with only relevant details included, considering the audience.

New management hiring is mentioned in single lines, as the extensive details provided may be excessive for the reader.

Business Overview

Products: *The company primarily sells one year Indemnity products which constitutes 98% of the portfolio, with personal accident and travel covering the remaining 2% of the product suite*

Premium growth: *In FY 2023, the non-life industry's premium grew at 16%, and stand-alone health insurers demonstrated a significant growth of 33%. ABC Health Insurance reported a premium growth of 27%, higher than that of non-life players, while it remained a laggard with respect to the stand-alone health insurance players.*

Expenses: *The company's expense ratio stood at 25% of Gross Written Premium, marginally less than other stand-alone health insurance players, i.e., 26%.*

Commission payout: *The company's commission ratio stood at 6.5% of Gross Written Premium, in line with the other stand-alone health insurance players, i.e., 6%.*

Business reinsured: *The company retained 80% of its business while ceding out 20% to reinsurers.*

Investment Income: *The company reported an investment return of 7%, which is a little below the industry's average of 7.8%.*

This paragraph is summarising a major portion of the extract. We include information on the products of the company, gross written premium growth, expense ratio, commission ratio, reinsurance percentage, investment return. It is taken from points 4, 5, 7, 8, 12. Note how a lot of information from the extract which was in table format has been trimmed down to give an overview in bullet form. This makes it easier to explain the volume and complexity of the information. Information in the extract such as "better expense management", "improvement of commission ratio due to move to direct selling channel", "proportional reinsurance arrangement" has been removed as these smaller details may not be concerning to the Transaction Head. Also understand that some information like reinsurance commission, proportional reinsurance may be a jargon for the audience in this case and hence not included.

Almost each bullet is coming from a point of the extract and given the high-level nature of the report, it has been decided to skip the details especially on Expense and Commission areas.