

GH VRC Model Solutions

Spring 2025

1. Learning Objectives:

1. The candidate will understand and apply valuation principles for insurance contracts.

Learning Outcomes:

- (1b) Explain the limitations and biases of the traditional valuation methods.
- (1c) Calculate appropriate claim reserves given data.
- (1d) Reflect environmental factors in reserve calculations (trend, seasonality, claims processing changes, etc.).
- (1g) Apply applicable standards of practice related to reserving.

Sources:

Group Insurance, Skwire, Daniel D., 8th Edition, 2021, Ch. 39: Claim Reserves for Short-Term Benefits

GHVR-103-16: Health Reserves

Commentary on Question:

This question is mainly aimed to test candidates' general valuation reporting applications and the methods of estimation for claim reserves, understanding the limitation of the traditional methods and the application of alternative methods.

Solution:

- (a) Describe how reserving assumptions and considerations differ under various reporting applications.

Commentary on Question:

Candidates performed adequately on this section. The most common reason for not earning full points was the omission of Experience Reporting and Valuation for Acquisition. Candidates may also receive credit for appropriate responses not referenced below.

1. Continued

Regulatory Reporting

- Most concerned with solvency, so assumptions should be conservative. Should review regulations and document specific requirements and adjustments made.

GAAP Reporting

- GAAP reports are concerned with solvency, but place increased emphasis on creating realistic earnings patterns. Allows actuaries to develop assumptions that are realistic with a provision for adverse deviation

Experience Reporting For Employers and Providers

- Typically involve less sophisticated calculation techniques. Incurred claims are often computed using factors applied to paid claims, changes in paid claims, exposures or other summary data.

Valuations for Acquisitions

- Varies widely depending on the size of the block of business and the circumstances surrounding the review. Common to have incomplete data or less than full understanding of issues that affect the liabilities.

- (b) Explain how actuaries can address drawbacks when using the development method.

Commentary on Question:

This question was not answered well in general. Most candidates only described 1-2 methods to address the drawbacks. Candidates may also receive credit for appropriate responses not referenced below.

- Many outside factors can cause development factors to change over time, so other methods should be used to confirm results.
- Seasonality can significantly affect completion factors, so factors should be compared to corresponding periods in previous years.
- Loss ratios can vary significantly by quarter, so factors should be separately as they relate to each calendar quarter.
- Uneven payment patterns or large payments can distort the factors. Large payments can be removed from the table and consider them separately.

1. Continued

- (c) List and describe four methods other than the development method for estimating claims reserves.

Commentary on Question:

This question was answered well in general. For full credit, candidates needed to explicitly mention subtracting paid amount from the estimated incurred claims. Candidates may also receive credit for appropriate responses not referenced below.

Case reserves

- This method develops reserves by estimating the ultimate claims amount for each reported claim and then subtracting the amount already paid against the claims. This is sometimes known as the examiners' method because claims examiners or other similarly qualified personnel attempt to estimate an amount to be paid based on specific information about a claim and historical experience with similar claims.

Projection Methods

- Projection methods estimate incurred claims by developing an historical claim rate as a function of membership or other measures of exposure to liability. The most common example is the use of "per member per month" (PMPM) costs. Reserves in this case are estimated by:
 1. developing a projected incurred claims cost per unit of exposure,
 2. multiplying this value times the exposure base for each period being estimated, and
 3. subtraction of known paid claims.

Loss Ratio Methods

- This is a form of projection method in which the estimate is based on anticipated loss ratios. The reserves are estimated by:
 1. Developing a projected loss ratio based on historical ratios of incurred claims to earned premium or on anticipated loss ratios from pricing or other analysis.
 2. Multiplying the loss ratio times exposed earned premium for the projected months.
 3. Subtracting known paid claims. This method has similar applications as the projection method, plus other possibilities:
 - Situations in which other projection methods are not useable because exposure data is either unavailable or unreliable.

1. Continued

- Situations in which historical claims costs are not available or reliable and for which pricing loss ratios are deemed to be more appropriate.
- Products or carriers for which the targeted loss ratio is an important metric for measuring internal performance.

Tabular Methods

- Tabular methods are commonly used to develop the present value of amounts not yet due by applying a continuance table deemed to be predictive of future claims liabilities. This approach to estimation is useful for claims such as disability and long term care for which a claim event triggers a sequence of payments. The continuance table is used to estimate the duration of such payments given the possibility of termination, lapse, mortality or other factors that would curtail payments. These claims are of sufficient duration that interest discounting will be required in developing the estimated liability.

- (d) Explain cases where each method described in (c) above is preferred.

Commentary on Question:

This question was answered well in general. Loss Ratio method shares some common applicable situations with Projection method. For full credit, candidates needed to describe the additional cases. Candidates may also receive credit for additional appropriate responses not referenced below.

Case reserves:

- Most often employed to develop claim estimates for very large catastrophic medical claims or liabilities associated with litigated claims. May also be used for STD, Hospital Income, or other such coverages for which the present value of amounts not yet due is easily estimated and not impacted by termination rates or other contingencies.

Projection Methods:

- Coverages where the incidence of claims is too low for other techniques.
- Situations where volume of data is insufficient for other methods.
- Situations where data is immature or otherwise form a questionable basis for calculations.
- Modifications or cross checks to compensate for less credible estimates of most recent incurral months.
- Validation of reasonableness of other methods.

1. Continued

Loss ratio methods:

- Same applications as projection methods.
- Situations where other projection methods can't be used because exposure data is unavailable or unreliable.
- Situations where historical claim costs are unavailable or reliable and where pricing loss ratios are deemed more appropriate.
- Products or carriers where loss ratio is an important metric for measuring performance.

Tabular:

- Useful for claims such as disability and long term care for which a claim event triggers a sequence of payments.

(e) Calculate average completion factors as of 12/31/20X1 for each lag using the following averaging methods:

(i) 3 of last 3

(ii) 4 of last 6

Show your work

Commentary on Question:

This question was answered well in general.

Answer:

The model solution for this part is in the Excel spreadsheet.

2. Learning Objectives:

- 3. The candidate will understand how to evaluate the impact of regulation and taxation on insurance companies and plan sponsors in Canada.
- 5. The candidate will understand how to describe and evaluate government programs providing health and disability benefits in Canada.

Learning Outcomes:

- (3b) Describe the major applicable laws and regulations and evaluate their impact.
- (3c) Understand the impact of the taxation of both insurance companies and the products they provide.
- (5b) Describe how private group insurance plans work within the framework of social programs in Canada.

Sources:

GHVR-714-F23: How Employers are Integrating DEI into their Benefits Plans

GHVR-700-19: Ch. 12 (sections 12.1-12.4) and 13 of Canadian Handbook of Flexible Benefits, McKay, Robert J., 3rd Edition

GHVR-644-22: TACCESS: An Advisor's Guide to Understanding How Taxes Impact Group Insurance Benefits in Canada

GHVR-694-19: Guide to Canada Benefits Legislation

Commentary on Question:

Candidates did generally well on this question. Most candidates showed a general understanding of regulation and taxation in Canada.

Solution:

- (a) List and describe how ABC can integrate DEI into their benefits plans.

Commentary on Question:

The study note GHVR-714-F23: How Employers are Integrating DEI into Their Benefits Plans—was inadvertently removed from the syllabus prior to its publication, but was correctly included in the study materials package sent to candidates. While the intent for the study note GHVR-714-F23 was to remain part of the syllabus, to ensure consistency for all candidates, each received full credit on this part of the question related to this study note.

2. Continued

- Offering gender affirmation benefits and coverage: it reimburses staff for procedures not covered by provincial and territorial governments, such as facial feminization procedures, tracheal shaving, laser hair removal, vocal therapy, pectoral implants, cheek fillers and more.
- Addressing family building: ABC can also start looking to benefits that help employees plan their families, including coverage for expensive fertility treatments and drugs, as well as adoption and surrogacy cost, and boosting the lifetime maximum for fertility drugs and procedures.
- Broadening core benefits: wellness accounts can help ABC introduce more options for employees. A wellness account can support diverse needs in benefits coverage without having to amend the contract.
- Diversity in the drug plan: ABC should reconsider their benefits plan through a DEI lens and could take a closer look at their drug formularies, particularly the supplemental drugs.
- Developing more inclusive language: outside of benefits offerings, employers and insurers are also looking to update the language and imagery in their communications materials, such as changing references to he/she pronouns on forms to the more gender-neutral they/them, etc.

(b)

- (i) Describe the key principles governing the structure of a HCSA.
- (ii) Describe the rules of the Canadian Revenue Agency (CRA) with respect to the rollover of unused credits and excess claims in a HCSA.
- (iii) Compare and contrast the characteristics of a HCSA versus a Wellness Spending Account.

Commentary on Question:

Overall, candidates did well on this question. Not all the points below were required for full credit.

- (i) Describe the key principles governing the structure of a HCSA.
 - Benefit elections must be made on a prospective basis, in advance of the plan year to which they relate.
 - Elections must be made before the plan year and must be irrevocable by the employee for the duration of the plan year.

2. Continued

- It may be acceptable to revise the amount of the employee's credits in certain situations (e.g., birth/ death of a dependent, change in marital status, change in employment status). The HCSA documents should indicate the life events where the employer wants to allow credit amount changes.
 - Must qualify as a PHSP as described by CRA to ensure benefits received from the plan are not taxable.
- (ii) Describe the rules of the Canadian Revenue Agency (CRA) with respect to the rollover of unused credits and excess claims in a HCSA.
- Excess HCSA credits may be rolled over for up to 12 months after the end of the plan and be used to reimburse the following year's expenses.
 - Excess HCSA claims may be rolled over for up 12 months after the end of the plan year and may be claimed from the following year's HCSA.
 - Employee must have allocated funds to the HCSA in the prior year in order to be allowed to roll expenses forward.
 - A plan that allows employees to roll over both excess claims and unused allocations will not qualify as a PHSP.
 - One year rollover period does not have to expire on termination of employment or retirement.
- (iii) Compare and contrast the characteristics of a HCSA versus a Wellness Spending Account.

Similarities:

- Sources of funds available to employees on how much they can spend in each account.
- Employees do not necessarily have to spend all of their HCSA/ Wellness account allowances, but they cannot claim over their limit. Private Plan covering prescription drugs must cover all the drugs on the "list of Medications" covered by the public plan and may not have any exclusion.

Differences:

- Employees can however only be reimbursed for eligible expenses that pertain to the Wellness Spending Account guideline set by the insurer and/or employer.
- Wellness Spending Account offers more flexibility and choices for employees, focusing on promoting health lifestyles (e.g., gym memberships, sports equipment, personal development courses, etc.)

2. Continued

- Wellness Spending Account is taxable to the employee and remains a tax-deductible expense to employer, unlike HCSA which provides tax-free benefits to employees.
 - Excess credits under a Wellness Spending Account are typically forfeited at the end of a plan year; whereas excess credits/ claims under a HCSA could be typically rolled over up to an additional 12 months.
- (c) Calculate ABC's additional per employee annual costs if they proceed with expansion into Quebec. State any assumptions and show your work.

Commentary on Question:

Most candidates were able to determine the premium for Basic Life and LTD benefits, but did not recognize that Manitoba premium tax is included in the premium rates. Many candidates also ignored the Quebec Premium Tax on ASO claims and fees.

- *The model solution for this part is in the Excel spreadsheet.*

3. Learning Objectives:

4. The candidate will understand and evaluate post-retirement and post-employment benefits in Canada.

Learning Outcomes:

- (4b) Determine appropriate baseline assumptions for benefits and population.
- (4c) Determine employer liabilities, service cost and expense for post-retirement and post-employment benefits for financial reporting purposes under IFRS and understand differences compared to US GAAP.

Sources:

GHVR-632-13: IAS19

GHVR-649-15 Comparison of IAS 19, Rev. 2011 with FASB ASC 715: Summary of Provisions Affecting Accounting for Postretirement Benefits

GHFV-650-24: Supplementary Study Note for Canadian Health Actuaries

Commentary on Question:

Overall candidates did really well on parts (a) through (d). Mostly all candidates had difficulty on part (e).

Solution:

- (a) Compare the methodology under ASC 715 and IAS 19 with respect to:

- Cost/Expense recognized
- Service cost
- Gain/loss recognition
- Past service cost

Commentary on Question:

This part was fairly straightforward, but the candidates either seem to confuse the 2 methodologies, or not go into enough details about the two methodologies.

Cost Expense Recognized ASC 715:

- Service cost + interest cost – expected return on plan assets +/- net loss or gain amortized +/- prior service cost amortized recognized + temporary deviation from plan (ASC 715-60 only) +/- curtailment and settlement effects
- Net periodic cost is recognized in P&L

Cost Expense Recognized IAS 19:

- Service cost +/- interest on net DB liability +/- remeasurement effects
- Service cost and interest on net DB liability/asset are recognized in P&L; remeasurements effects are recognized in OCI

3. Continued

Service Cost Recognized ASC 715:

- Current service cost

Service Cost Recognized IAS 19:

- Current service cost + past service cost/(credit) including change in DBO due to curtailment +/- effects of (non routine) settlements

Gain/Loss Recognition Recognized under ASC 715:

- Immediate or delayed recognition; at a minimum amortize unrecognized net gain or loss falling outside the corridor (10% of greater of PBO and MRV of plan assets) over average remaining service period of active employees expected to receive benefits under the plan. Unrecognized amounts are included in AOCI.

Gain/Loss Recognition Recognized under IAS 19:

- Service cost + interest cost – expected return on plan assets +/- net loss or gain amortized +/- prior service cost amortized recognized + temporary deviation from plan (ASC 715-60 only) +/- curtailment and settlement effects
- Net periodic cost is recognized in P&L

Past Service Cost ASC 715:

- Change in DBO resulting from introduction or change to benefits

Past Service Cost ASC 715:

- Immediate recognition at earlier of (i) plan amendment or curtailment (ii) when related restructuring costs or termination benefits are recognized
- (b) Describe typical demographic assumptions needed to perform a post-retirement benefits plan valuation.

Commentary on Question:

Every candidate either got full marks or 3 of the 4 marks for this section. It was a straightforward ask that showed that the candidates understood what is involved in PRB valuation work.

- Mortality: best estimate of mortality of plan members both during and after employment
- Rates of EE Turnover: best estimate of plan members expected to turnover in the plan
- Proportion of plan members with dependants who will be eligible for benefits: at retirement the proportion of plan members that will receive single coverage and the proportion that will receive some sort of family/couple coverage

3. Continued

- Claim rates under medical plans: how much a plan member is expected to claim once eligible
- (c) Describe typical financial assumptions needed to perform a post-retirement benefits plan valuation.

Commentary on Question:

Similar to part (b), i.e. candidates understood the ask for this part and answered it well.

- Discount rate: Used to determine the present value of the valuation's cashflow stream; determined by market yields at the end of reporting period based on high quality corporate bonds/government bonds
 - Salary Scale: estimate of future salary increases impacting benefits
 - Changes in employer contribution to plan: increase/or reduction in employer/employee cost sharing of cost, changes to state/government benefits can impact this as well
 - Claims handling costs (expenses): Expenses paid to administer/pay benefits
 - Taxes: Federal and provincial taxes that apply to the cost of benefits
- (d) Calculate the following:
- (i) Defined Benefit Obligation (DBO) as of December 31, 20X1
 - (ii) Current service cost for 20X2

State any assumptions and show your work.

Commentary on Question:

Many candidates understood the ask here. Candidates did well in incorporating the different assumptions into the answer. The timing (boy, my, eoy) were off on many of the answers, either with discount, or other variables and thus candidates did not get the final answer. Many were close and it showed they understood the ask, especially the part of setting up the calculation, if not outlining the final answer correctly.

- *The model solution for this part is in the Excel spreadsheet.*

3. Continued

- (e) Create a reconciliation of the DBO for the year 20X2 by completing the following table:

Change in DBO	Year 20X2
DBO at end of prior year	
Current service cost	
Interest expense	
Benefit payments from employer	
Remeasurements	
- Effect of changes in demographic assumptions	
- Effect of changes in financial assumptions	
- Effect of experience adjustments	
DBO at end of year	

State any assumptions and show your work.

Commentary on Question:

Candidates did not perform well on this question. A few candidates did try to incorporate all the remeasurement items in one go, which led to less marks as it did not satisfy the ask.

- *The model solution for this part is in the Excel spreadsheet.*

4. Learning Objectives:

2. The candidate will understand how to prepare and be able to interpret insurance company financial statements in accordance with IFRS & IAS.

Learning Outcomes:

- (2b) Evaluate key financial performance measures used by life and health insurers for both short and long-term products.
- (2d) Describe the planning process of a life and health insurance company (strategic, operational, and budgeting).
- (2e) Compare key differences and similarities in measures by accounting basis.
- (2g) Explain fair value accounting principles and describe International Accounting Standards (IAS).
- (2h) Construct basic financial statements and associated actuarial entries for a life and health insurance company.

Sources:

Group Insurance, Skwire, 8th Edition, 2021 - Ch. 37: Group Insurance Financial Reporting in Canada

Comparison of IFRS 17 to Current CIA Standards of Practice, Jun 2022 (excluding sections 3.3, 7.2.1, 7.2.2, 7.2.3, 7.2.5 & 8.1.1)

CIA Educational Note - Sources of Earnings Calculations – Group Life and Health, Oct 2010

Commentary on Question:

Overall, most candidates did not perform well on this question, especially on parts (b) (ii) and (c).

Solution:

- (a)
 - (i) List the key components required in the Appointed Actuary Report (AAR) as mandated for inclusion in the Life-1 annual statement by regulatory authorities.
 - (ii) Describe the general principles for valuation according to Canadian Asset Liability Method (CALM).

Commentary on Question:

Most candidates were able to successfully recall direct syllabus for full marks on part (i) and part (ii), ensuring sufficient information was provided to receive the allocated marks.

4. Continued

- (i) ***Key components required in the AAR***
 - A description of all the assumptions used with a full and complete justification for each assumption.
 - A description of any approximations used.
 - Any changes in the assumptions and the effect thereof.
 - A signed statement which affirms compliance with the Standards of Practice of the CIA.
 - A description of how the actuary is compensated and a signed statement to the effect that the actuary has performed her/his duties without regard to personal considerations.
 - A signed copy of the opinion of the actuary.
 - Any other information that the Superintendent may require.
 - (ii) ***General Principles for Valuation***
 - Liabilities should be computed on a going-concern basis.
 - Expected experience should be used in the valuation, with a separate PfAD for assumptions about the future.
 - Expenses related to relevant policies and to the assets supporting policy liabilities should be incorporated in the computation of actuarial liabilities.
 - Most costs should be included, except for income taxes, marketing overhead, and shareholder transfer.
 - Policy dividends, surrender privileges and policy lapsation should be considered.
- (b)
- (i) Compare and contrast the calculation of discount rate for insurance contract liabilities under IFRS 17 versus under CALM.
 - (ii) Describe the two main approaches for developing discount rate curves under IFRS 17.

Commentary on Question:

Most candidates were able to successfully recall some of the material. However, candidates did not include sufficient details in order to receive full marks.

- (i) ***General Principles for Valuation***
 - Under IFRS 17, discount rates for insurance contract liabilities are based on a liquidity-adjusted risk-free discount rate curve.
 - IFRS17 discount curve is developed without taking into consideration the assets used to support the liabilities and without making reinvestment/disinvestment assumptions.

4. Continued

- IFRS 17 does not differentiate between P&C and life and health in setting discount rates.
- Under CALM, there is no direct discounting of liabilities.
- While CALM does not result in explicit discount rates, it is common practice to solve for an equivalent discount rate which can be interpreted as the expected annual portfolio return on the assets supporting the insurance contract liability.

(ii) *Two main approaches for developing discount rates*

Bottom-up approach

- A risk-free discount curve is adjusted by adding an illiquidity premium to reflect the characteristics of the insurance contract liabilities
- Illiquidity premium may be explicit or implicit
- Several judgments and estimates are required in this process, including whether the risk-free discount curve should be based on government bond rates or swap rates, determining the longest duration risk-free asset with a reliable yield, estimating risk-free rates beyond the observable period, and estimating the illiquidity premium.

Top-down approach

- Under the top-down approach, a reference portfolio of assets is selected with characteristics that are similar to those of the insurance contract liability.
- The current yields on these reference assets are then adjusted to remove characteristics of the assets that are not relevant to the liability, such as credit risk and market risk
- Key judgments and estimates include selecting the longest duration of reference assets with reliable yields, estimating rates beyond the observable period, choosing the reference portfolio, and adjusting the yield on the reference portfolio for any differences in liquidity characteristics compared to the insurance contract liabilities.

4. Continued

- (c)
- (i) Write down the formula for the expected profit contained in the SOE report.
 - (ii) Write down the formula for the experience gains or losses contained in the SOE report.
 - (iii) Calculate the result in (i) and (ii).
 - (iv) Create an SOE report in accordance with the CIA standards.

State any assumptions and show your work.

Commentary on Question:

Candidates were required to recall formulae and apply it to receive full marks. Overall, candidates in general did not perform well on this part even though it has been consistently tested on prior exams.

- *The model solution for this part is in the Excel spreadsheet.*

5. Learning Objectives:

1. The candidate will understand and apply valuation principles for insurance contracts.
3. The candidate will understand how to evaluate the impact of regulation and taxation on insurance companies and plan sponsors in Canada.

Learning Outcomes:

- (1c) Calculate appropriate claim reserves given data.
- (3b) Describe the major applicable laws and regulations and evaluate their impact.
- (3c) Understand the impact of the taxation of both insurance companies and the products they provide.

Sources:

Group insurance, Ch. 40: Claim Reserves for Long-Term Benefits

GHVR-621-19: Canadian Life and Health Insurance Association: Guideline G3, Group Life and Health Insurance

GHVR-647-15: Protecting Canadians' Long Term Disability Benefits

Commentary on Question:

Commentary listed underneath questions component.

Solution:

- (a) Assess whether the proposed plan design adequately maintains employee LTD benefits on an after-tax basis. State any assumptions and show your work.

Commentary on Question:

Candidates performed either strongly or not on this part. Most candidates recognized employer-paid LTD benefit will be taxable. Some candidates did not consider the current LTD benefit cap in their calculations.

- *The model solution for this part is in the Excel spreadsheet.*

- (b) Calculate the following for the proposed design:
 - (i) The expected percentage increase in total monthly premiums paid to the insurer.
 - (ii) The expected percentage increase in the insurer's monthly premium rate, expressed on a per \$100 of monthly benefit basis.

State any assumptions and show your work.

5. Continued

Commentary on Question:

Candidates did not perform well on this part. Some candidates demonstrated understanding of the concept by outlining / setting up formula.

- *The model solution for this part is in the Excel spreadsheet.*

- (c) Describe four risks associated with self-insured LTD arrangements.

Commentary on Question:

Candidates did strongly on this part. Most candidates were able to describe at least four risks associated with self-insured LTD arrangements.

- There is no specific regulation to invoke if payments fail to be made due to the plan sponsor's financial difficulty.
- Under a self-insured ASO LTD arrangement, disabled members are not eligible to receive benefits from Assuris in the event of insolvency.
- Plan sponsors are not required to set up a reserve to pay disabled employees.
- Benefit payments rely on the plan sponsor's ability to generate adequate cash flow for the duration of the benefit period of any disabled employees.
- In times of financial stress, it can be challenging for plan sponsors to continue to support their LTD commitments.
- In the event of insolvency, disability liabilities are "unsecured debts" in the wind up of a company.
- Uncertainty of cost – there may not be cost savings in moving from an insured plan to an uninsured plan. Uninsured plans may appear to have lower cost at first because insured plans have to set up reserves for future claims early on.
- The existing legislative framework have focused on disclosure, rather than protecting disabled members during insolvency.

- (d) Analyze whether Company ABC should proceed in self-insuring the LTD benefit. State any assumptions and show your work.

Commentary on Question:

Candidates did not perform very well on this part. Minimum attempts were made by most of the candidates.

- *The model solution for this part is in the Excel spreadsheet.*

6. Learning Objectives:

2. The candidate will understand how to prepare and be able to interpret insurance company financial statements in accordance with IFRS & IAS.

Learning Outcomes:

- (2a) Interpret insurer financial statements from the viewpoint of various stakeholders.
- (2c) Project financial outcomes and recommend strategy to senior management to achieve financial goals.
- (2d) Describe the planning process of a life and health insurance company (strategic, operational, and budgeting).
- (2h) Construct basic financial statements and associated actuarial entries for a life and health insurance company.

Sources:

CIA Educational Note - Financial Condition Testing, Jan 2023, pp. 1-45

GHVR-693-24: OSFI Guidelines for Life Insurance Capital Adequacy Test (LICAT) - Ch. 1: Overview and General Requirements (All sections) (pp. 5-14)

GHVR-693-24: OSFI Guidelines for Life Insurance Capital Adequacy Test (LICAT) - Ch. 11: Aggregation and Diversification of Risks (All sections) (pp. 210-217)

Commentary on Question:

The question tested candidates on their general understanding of financial statements and different assessment requirements. Candidates that showed a general understanding overall did well. Calculations and analysis spanned multiple parts of the question. Partial marks were awarded for correct answers, even if errors were carried forward. In these cases, it was important that candidates showed their work to earn partial credit.

Solution:

- (a)
 - (i) Describe the considerations supporting the integration of FCT with the Own Risk and Solvency Assessment (ORSA).
 - (ii) Describe the challenges you may encounter when integrating the FCT and the ORSA.

Commentary on Question:

Not all details shown in the model answer was needed for full credit.

6. Continued

Part (i):

- ORSA-defined internal target capital ratios, which is a key component in the development of the AA's opinion. Should the internal target capital ratios be assumed to evolve over the duration of the projection, for example due to significant growth and expansion in the insurer, it would be appropriate to assume internal target capital ratios that differ from the ones provided in the ORSA. The actuary would provide justification for internal target capital ratios that are different from the ones provided in the ORSA.
- The ORSA's usefulness in assessing the going concern or solvency nature of adverse scenarios, and in supporting the development of adverse scenarios
- Efficiencies such as:
 - Consistent timing.
 - General reporting needs such as collection of data, analysis, management discussions, production of reports, internal and external party reviews of reports.
 - Overlapping requirements such as comprehensive stress scenario testing.
- A comprehensive view of both regulatory and own capital requirements that can better inform decision-making and management action.

Part (ii)

- Oversight of FCT lies with the AA whereas the ORSA accountability lies with senior management with oversight provided by the board of directors.
- FCT follows a prescribed regulatory basis while the ORSA models and processes difficult.
- Areas of the organization responsible for FCT may differ from those coordinating the ORSA, increasing the cost of coordination and change management. reflects own models and assumptions. The differences in bases of calculation may make efficient integration of models and processes difficult.
- Areas of the organization responsible for FCT may differ from those coordinating the ORSA, increasing the cost of coordination and change management.

6. Continued

- (b) Calculate the following projected income statement items for XYZ under each of the three scenarios for projection years 1 to 10, using the table provided in the Excel spreadsheet:

- Premiums
- Death claims
- Investment income
- Change in reserve
- Expenses
- Gain/loss

State any assumptions and show your work.

Commentary on Question:

Most candidates did well in this section. Partial credit was awarded where the solution was incorrect, but candidates showed their work. All 10 years of projections was needed for full credit.

- The model solution for this part is in the Excel spreadsheet.

- (c) Calculate the total LICAT ratios for projection years 1 to 10 under each scenario. State any assumptions and show your work.

Commentary on Question:

Part (c) built on inputs from part (b), but not necessary for full credit. Many candidates missed providing projections for all years. It was common for candidates to complete part (c), appended to part (b). This was acceptable and no marks were deducted for where and how the work was presented in the Excel spreadsheet.

- The model solution for this part is in the Excel spreadsheet.

- (d) Recommend a FCT opinion based on answers from parts (b) and (c). Justify your answer.

Commentary on Question:

Credit was given to candidates that made reasonable opinions based on their calculations in part (b) and part (c). Candidates needed to comment on all three scenarios for full credit.

6. Continued

- **Base scenario:** XYZ's capital ratios over the next 10 years are above the internal target determined by ORSA. Meet the threshold of a Satisfactory opinion
- **Adverse scenario:** XYZ's capital ratios decrease below the internal target but above minimum regulatory ratio. Meet the threshold of a Satisfactory opinion
- **Solvency scenario:** insurance liabilities are projected between 56M\$ to 61M\$, while the investment assets value is 55M\$ which is below the liability in the projection years. Failed the threshold of a satisfactory opinion. Management should consider corrective actions, injecting capitals or adjust pricing. Failed to suggest appropriate actions would result in a "non satisfactory" opinion

(e)

- (i) Identify the risks associated with each scenario.
- (ii) Describe the potential ripple effects with each scenario.
- (iii) Propose managerial actions that could be taken to mitigate the adverse impacts of these two scenarios.

Commentary on Question:

Candidates did well in part (i), where they needed to identify the risks, but they did not perform well with the (ii) and (iii), where they were asked to describe the potential ripple effects and managerial actions. Candidates did not need to list the same points as what is in the model solution for full credit.

Scenario 1

- Risk associated: Morbidity Risk
- Ripple Effects:
 - Constraints to rate increases if the industry reacts slowly in implementing renewal rate increases.
 - Rate guarantees that limit or delay required rate increases.
 - Increases in anti-selective lapses dampen or nullify the effect of rate increases.
 - Adverse publicity/reputation damage arising from claim or underwriting practices, leading to decreased sales of new business.

6. Continued

- Managerial Actions:
 - Increasing premium rates.
 - More active claims management

Scenario 2

- Risk: Business mix risk
- Ripple Effects:
 - Higher lapse rates on existing business.
 - Poorer claims experience on the remaining business.
 - Poorer coverage of maintenance expenses (resulting from both lower current sales as well as higher lapses on existing business).
 - Ripple effects on associated lines of business to the affected line of business (for example, distribution channels primarily involved in one line of business may contribute to significant future sales in another line).
- Managerial Actions:
 - Reviewing bonuses paid to agents and brokers.
 - Diversification into more than one line of business.
 - Control over non-variable expense levels.
 - Maintaining contingency action plans to be implemented in case one of these events occurs.

7. Learning Objectives:

3. The candidate will understand how to evaluate the impact of regulation and taxation on insurance companies and plan sponsors in Canada.

Learning Outcomes:

- (3c) Understand the impact of the taxation of both insurance companies and the products they provide.

Sources:

GHVR-644-22: TACCESS: An Advisor's Guide to Understanding How Taxes Impact Group Insurance Benefits in Canada

Pharmacare: Is There a Pill for That? CIA, Feb 2021

Commentary on Question:

Commentary listed underneath questions component.

Solution:

- (a) Recommend whether Company ABC should adopt the third-party consultant's proposal. State any assumptions and show your work.

Commentary on Question:

Some candidates received partial marks and the others received no points at all in this section, with very few earning points for the calculation of lost productivity and saved income.

- *The model solution for this part is in the Excel spreadsheet.*

(b)

- (i) Describe the principles that a National Pharmacare program should follow, according to the Hoskins Report.
- (ii) Describe the Canadian actuarial community's proposed framework to National Pharmacare.
- (iii) Describe the Canadian actuarial community's considerations to ensure the long-term sustainability of National Pharmacare.

Commentary on Question:

Candidates generally did better on parts (i) and (ii). Very few candidates provided relevant answers for part (iii).

7. Continued

(i)

- *Keep out-of-pocket costs for all products listed on the formulary to no more than \$5.00 per prescription, with a copayment of \$2.00 for essential medicines and an annual maximum of \$100 per household per year.*
- *Structure legislation within the same fundamental principles of Canada Health Act (i.e., universality, comprehensiveness, portability and public administration).*
- *Provide coverage for a national list of prescription drugs and related products (a national formulary) to ensure equity.*
- *Allow private coverage to supplement coverage under the pharmacare program.*

(ii)

- **Provincial flexibility** – *Provinces and territories should be afforded the flexibility to design their own public prescription drug plan and create a structure for the coordination of their public plan with the existing private drug insurance marketplace.*
- **Oversight** – *Establish an overseeing body comprised of decision-makers from federal, provincial/ territorial, and private plans to negotiate drug prices on behalf of all public and private plans across Canada. This body will also explore how to implement optimal evidence-based prescribing and public health alternatives to pharmaceuticals.*
- **Coverage** – *Establish a national formulary by the overseeing body to define the core and specialty medicine that will be covered. Both public and private plans should cover at the minimum, all drugs included in the national formulary, to guarantee consistency across the plan. The cost borne by the patient as deductible, coinsurance, or copayments should be limited to an affordable amount.*
- **Insurance and reinsurance** – *Private plans should continue to cover costs up to a certain limit based on each plan's risk appetite, while provincial and territorial plans should cover up to a certain limit of an individual's aggregate costs, after which the federal government should pay for costs beyond the defined limit. High-cost drugs on the national formulary should be reinsured by the federal government on an individual basis for both private and public plans. There would be no premiums for the federal reinsurance.*

7. Continued

(iii)

- *Review of historical experience data from large, existing prescription drug plans whose provisions are as closely aligned as possible with the plan design being considered (e.g., drug experience from the Public Service Health Care Plan (TBS2015), OHIP+ (which provides indication for the short-term pent-up demand).*
 - *Incorporate the additional purchasing power in the financial projections that the overseeing body would obtain through negotiations.*
 - *Canada Health Act does not outline a funding formula for healthcare, so both federal and provincial/ territorial jurisdictions need to consider how best to fund their respective portions of cost. Participation by the federal government would need to be guaranteed to ensure the participation of the provinces/ territories.*
 - *Previous cost projections by Parliamentary Budget Office (PBO) using the same model with a different set of assumptions if a universal pharmacare program had been implemented had resulted in significantly different in cost shifting to the federal, suggesting the wide range of possible experience and the need for more consistent cost projections.*
 - *Undertake periodic reporting/valuation on achievement of the framework's objectives with benchmarking against the best performers globally. Reporting should also be made available to the public on overall health costs versus life expectancy.*
- (c) Evaluate whether Company ABC should offer the prescription drug coverage with reference to your recommendation in part (a). State any assumptions and show your work.

Commentary on Question:

Candidates lack understanding of this question and did not perform very well on this part. Minimum attempts made by most of the candidates.

- *The model solution for this part is in the Excel spreadsheet.*