

GI FREU Model Solutions

Spring 2019

1. Learning Objectives:

4. The candidate will be able to describe the current and historical regulatory environment.

Learning Outcomes:

- (4b) Describe and interpret the current state of general insurance regulation in the U.S. and its development.
- (4c) Compare different forms of rate regulation.
- (4d) Discuss market conduct regulation.

Sources:

Insurance Regulation, The Institutes

- Chapter 7 (Underwriting Regulation)
- Chapter 8 (Rate Regulation)

Commentary on Question:

This item tests a candidate's understanding of insurance regulation regarding underwriting and use of gender for rate discrimination.

Solution:

- (a) Describe the purpose of each of the following types of state laws regarding an insurer's underwriting activities:
 - (i) Declination, termination and disclosure laws
 - (ii) Unfair trade practice laws
 - (iii) Policy form laws

Commentary on Question:

The model solution is an example of a full credit solution.

1. Continued

- (i) These laws are in place to ensure that an insured will be informed of the reasons for any declination or termination of insurance coverage. For termination, these laws require an insured to be given sufficient notice to find replacement coverage. These laws also set the rules for legally permitted conditions for declination or termination of insurance coverage.
 - (ii) These laws are in place to ensure that insurers do not use unfair methods of competition or engage in unfair actions as defined by law.
 - (iii) These laws require that policy forms used by insurers have been approved by a DOI. This ensures that policy forms include all required provisions for a valid insurance contract.
- (b) Provide an example of an underwriting regulation that may limit availability.

Commentary on Question:

Many different correct responses are possible here. To receive credit, the example regulation provided must be an underwriting regulation. Identifying a solvency regulation would not receive credit. The model solution is an example of a full credit solution.

As part of policy form approval authority, a state DOI may require that a commercial liability insurance policy form includes coverage for claims from pollution. Reinsurers might require the primary insurer's commercial liability policies to exclude claims from pollution. Without an adequate supply of reinsurance, some primary insurers may leave the commercial liability market limiting the availability of commercial liability insurance coverage.

- (c) Explain why the DOI may:
- (i) Approve the filed rates
 - (ii) Not approve the filed rates

Commentary on Question:

The model solution is an example of a full credit solution.

1. Continued

- (i) The DOI may be in a state that permits rate discrimination on gender and the DOI finds the insurer's analysis credible.
- (ii) The DOI may be in a state that does not permit rate discrimination on gender. The high correlation of nurse occupation with being a female would likely be considered rating on gender. Even if the state permits rate discrimination on gender, the DOI may not approve the rates if the insurer's analysis was not credible or the insurer already varies rates on gender and rating on being a nurse would double count this factor for nurses.

2. Learning Objectives:

1. The candidate will understand the elements of financial reporting for general insurance companies.

Learning Outcomes:

- (1c) Describe the elements of the NAIC Annual Statement.
- (1d) Complete and interpret selected pages/schedules in the NAIC Annual Statement as included in the resources.

Sources:

General Insurance Financial Reporting Topics, Fourth Edition, Society of Actuaries

- Chapter 6 (Schedule F, Statutory Credit for Reinsurance)

Commentary on Question:

This item tests a candidate's ability to calculate the Schedule F provision for unauthorized reinsurance.

Solution:

Determine SSIC's total Schedule F provision for reinsurance for the 2017 Annual Statement.

Commentary on Question:

A correct calculation may be presented in several different ways. The model solution is one example of a presentation of the calculation that would receive full credit.

Talcott Re is unauthorized and not certified (Amounts in thousands) :

- Provision = total recoverables – collateral + minimum of [20% of (overdue recoverables + amounts in dispute), collateral]
= 350 + 180 + 120 + 150 + 50 + 40 + 35 + 75 – (100 + 800)
+ minimum of [0.2 × (150 + 50 + 0), (100 + 800)]
= 1,000 – 900 + 40
= 140
- This is less than the total recoverables of 1,000, so no capping is required.

Webster Re is unauthorized and certified (Amounts in thousands):

- The lower state rating is selected, so Webster Re is Secure-4 with a 50% collateral factor.
- The certified reinsurer provision is in two parts: A) unsecured recoverables using the 50% collateral factor and B) overdue reinsurance.

2. Continued

- $A = \text{Net amount recoverable} - \text{Percent credit allowed} \times \text{Net amount recoverable}$.
 - $\text{Net amount recoverable} = 340 + 230 + 150 + 200 + 0 + 55 + 25 = 1,000$
 - $\text{Percent credit allowed} = (\text{Total collateral} / \text{Net amount recoverable}) / 50\%$
 $= (220 / 1,000) / 50\% = 44\%$
 - $A = 1,000 - (44\% \times 1,000) = 560$
- $B = \text{Greater of } (20\% \text{ on overdue recoverables on paid or } Y)$.
 - $Y = \text{if slow paying, } 20\% \text{ of net unsecured recoverable for which credit is allowed.}$
 - Slow paying since $200 / (920 + 15) = 21.4 > 20\%$.
 - $Y = 20\% \times [(44\% \times 1,000) - 220] = 44$
 - $B = \text{Greater of } (20\% \text{ of } (200 + 0)) \text{ and } 44 = 44$
- $\text{Provision} = 560 + 44 = 604$
- $\text{Total recoverables is } 340 + 230 + 150 + 200 + 0 + 55 + 25 + 0 = 1,000$
- This is less than the total recoverables of 1,000 so no capping is required.

Therefore, the total Schedule F provision is 744,000 (= 604,000 + 140,000).

3. Learning Objectives:

5. The candidate will be able to understand tort law and insurance law with respect to its impact on the general insurance industry.

Learning Outcomes:

- (5a) Describe and interpret the key elements of tort law and the underlying principles of insurance law.
- (5e) Describe and interpret legal cases/issues included in the syllabus resources.

Sources:

Cappelletti, A., "Tort Law: Topics for General Insurance Actuaries," Society of Actuaries Study Note

Excerpts from Business Law for Insurance Professionals, Institutes Custom Publishing, Assignment 2 (Tort Law)

Commentary on Question:

This item tests a candidate's knowledge of negligence under tort law and the application of "res ipsa loquitor".

Solution:

- (a) Explain how the legal doctrine of *res ipsa loquitor* could be used by the plaintiff in this case.

Commentary on Question:

Widely varying full credit solutions are possible. For full credit, the candidate was required to show an understanding of negligence and how "res ipsa loquitor" shifts the burden of proof under tort law. The model solution is an example of a full credit response.

This case involves an unintentional tort. For an unintentional tort, the plaintiff normally has the burden to prove that the defendant was negligent. In this case, Carla cannot prove one of the essential elements of negligence—that ODM actually breached its duty of care.

Application of *res ipsa loquitor* permits an inference of negligence if the action causing injury was under the defendant's exclusive control and the accident would not have happened if the defendant had exercised ordinary care.

Application requires the probability that the defendant was negligent. The defendant has a duty to rebut this inference. Contributory negligence on the part of the plaintiff will generally not permit the application of *res ipsa loquitor*.

3. Continued

In this case, ODM had exclusive control of tightening the bolts on the wheels and that the likely cause of the accident was the bolts not being properly tightened. ODM's rebuttal of contributory negligence is weak. Successful application of *res ipsa loquitor* by the plaintiff is likely.

- (b) Explain how the use of an expert witness for the plaintiff affects the application of *res ipsa loquitor*.

Commentary on Question:

Widely varying full credit solutions are possible. For full credit, the candidate was expected to show an understanding of how expert witnesses may be permitted in cases applying "res ipsa loquitor". The model solution is an example of a full credit response.

Res ipsa loquitor presumes negligence based upon the facts of the case where "the event must be of a kind which ordinarily does not occur in the absence of someone's negligence." This is normally interpreted as being established by common understanding which precludes the use of expert testimony.

However, *res ipsa loquitor* was expanded by the courts to permit the use of an expert witness to allow non-experts to understand what is considered common understanding for experts.

In this case, the courts could permit the expert testimony even under application of *res ipsa loquitor* as the expert witness will likely explain facts that are common understanding for experts.

4. Learning Objectives:

1. The candidate will understand the elements of financial reporting for general insurance companies.

Learning Outcomes:

- (1a) Understand and apply the concepts of insurance accounting.
- (1b) Compare different financial reporting standards for general insurers including: U.S. Statutory Account Principles (SAP), U.S. Generally Accepted Accounting Principles (GAAP), Canadian Generally Accepted Accounting Principles (CGAAP), Solvency II and International Financial Reporting Standards (IFRS)
- (1e) Understand and apply the concepts of reinsurance accounting.

Sources:

General Insurance Financial Reporting Topics, Fourth Edition, Society of Actuaries

- Chapter 1 (Accounting Systems for General Insurers)
- Chapter 2 (Accounting for Insurance Contracts)
- Chapter 3 (Accounting for Financial Instruments)
- Chapter 4 (Accounting for Reinsurance Contracts)

Commentary on Question:

This item tests a candidate's understanding of the differences in accounting under U.S. GAAP and U.S. statutory accounting for insurance and reinsurance.

Solution:

- (i) U.S. statutory accounting principles
- (ii) U.S. GAAP

Commentary on Question:

There are various ways a full credit solution can be displayed. The model solution is a full credit response displaying the entries in a table with columns for debits and credits. A tabular display such as this was not required for full credit.

- (i)

<i>July 1, 2018 Premium received</i>	<i>Debit</i>	<i>Credit</i>
Cash	1,000	
Unearned Premium Reserve (UEPR)		1,000
<i>July 1, 2018 Commission paid</i>	<i>Debit</i>	<i>Credit</i>
Agent Commission Expense	150	
Cash		150

4. Continued

(ii)

<i>July 1, 2018 Premium received</i>		
	<i>Debit</i>	<i>Credit</i>
Cash	1,000	
UEPR		1,000
<i>July 1, 2018 Deferred acquisition cost (DAC)</i>		
	<i>Debit</i>	<i>Credit</i>
Deferred Acquisition Cost (DAC)	150	
Cash		150

(b) Show the insurer's December 31, 2018 accounting entries for this policy using:

- (i) U.S. statutory accounting principles
- (ii) U.S. GAAP

Commentary on Question:

There are various ways a full credit solution can be displayed. The model solution is a full credit response displaying the entries in a table with columns for debits and credits. A tabular display such as this was not required for full credit.

(i)

<i>Dec. 31, 2018 Premium earned</i>		
	<i>Debit</i>	<i>Credit</i>
UEPR	500	
Earned Premium		500

(ii)

<i>Dec. 31, 2018 Premium earned</i>		
	<i>Debit</i>	<i>Credit</i>
UEPR	500	
Earned Premium		500
<i>Dec. 31, 2018 DAC accrual</i>		
	<i>Debit</i>	<i>Credit</i>
Agent Commission Expense	75	
DAC		75

(c) Calculate the change during calendar year 2018, arising from this policy, in:

- (i) U.S. statutory accounting Policyholders' Surplus
- (ii) U.S. GAAP Equity

Commentary on Question:

Surplus is increased by premium earned less the acquisition costs incurred during the year.

4. Continued

- (i) Increased by $500 - 150 = 350$
- (ii) Increased by $500 - 75 = 425$
- (d) Calculate the change during calendar year 2018, arising from this policy with the quota share reinsurance in place, in:
 - (i) U.S. statutory accounting Policyholders' Surplus
 - (ii) U.S. GAAP Equity
- (i) Increased by $500 \times (100\% - 40\%) - 150 + 120 = 270$
- (ii) Increased by $500 \times (100\% - 40\%) - 75 + 60 = 280$
- (e) Calculate the surplus relief in 2018 from the quota share reinsurance program applied to this policy using:
 - (i) U.S. statutory accounting principles
 - (ii) U.S. GAAP
- (i) Surplus relief = Ceding Commission \times Ceded UPR
 $= 30\% \times (1,000 \times 40\% \times 50\%) = 60$
- (ii) Surplus relief = 0

5. Learning Objectives:

2. The candidate will understand the analysis of a general insurer's financial health through prescribed formulas, ratios and other solvency regulation methods.

Learning Outcomes:

- (2g) Demonstrate knowledge of ORSA and its implementations.

Sources:

NAIC Own Risk and Solvency Assessment (ORSA) Guidance Manual

General Insurance Financial Reporting Topics, Fourth Edition, Society of Actuaries

- Chapter 12 (Solvency Monitoring)

Commentary on Question:

This item tests a candidate's understanding of the NAIC's principles for an effective ERM framework and the risks to be included in an ORSA Summary Report.

Solution:

- (a) Describe three of the five principles identified by the NAIC.

Commentary on Question:

The five principles were as follows: Risk Culture and Governance, Risk Identification and Prioritization, Risk Appetite, Tolerances and Limits, Risk Management and Controls, Risk Reporting and Communication. Partial credit was given for identification of any three of the five. Full credit required simple descriptions that showed an understanding of the three principles identified. The model solution is an example of a full credit solution. Note that the simple descriptions in the model solution are not the only descriptions that could receive full credit. Different correct descriptions are possible. For example, for Risk Culture and Governance, a description such as "A structure that clearly defines roles, responsibilities and accountabilities for risk management" would also receive full credit.

- Risk Culture and Governance – Requires inclusion of a culture that supports accountability in risk-based decision-making.
 - Risk Identification and Prioritization – Requires inclusion of a risk identification and prioritization process that is appropriate and functioning properly at all organizational levels.
 - Risk Appetite, Tolerances and Limits – Requires an understanding of the risk appetite statement to ensure alignment with risk strategy by the board of directors.
- (b) Describe three risks that Phillip should consider including in Section 2 of Jwig's NAIC ORSA Summary Report.

5. Continued

Commentary on Question:

Widely varying full credit responses were possible for this item. The model solution is an example of a full credit solution. The key to a full credit response is that the three risks described in the response should be three separate risks and that each relate to the information provided for JWIG. The model solution is an example of a full credit solution.

- JWIG should include reinsurance credit risk because of its exposure to large losses and catastrophe losses that are covered by reinsurance.
- JWIG's should include liquidity risk because its exposure to large losses and catastrophe losses with high retentions can put a strain on liquid assets.
- JWIG's should include operational risk of inadequate personnel because they are exposed to the risk of multiple claims at the same time that can put a strain on its claims adjusters.

6. Learning Objectives:

1. The candidate will understand the elements of financial reporting for general insurance companies.
3. The candidate will be able to apply the standards of practice regarding the responsibilities of the actuary as defined by regulators and the American Academy of Actuaries.

Learning Outcomes:

- (1a) Understand and apply the concepts of insurance accounting.
- (3b) Describe, interpret and apply the responsibilities of the actuary with respect to the Statement of Actuarial Opinion and the Actuarial Report.

Sources:

NAIC Statement of Statutory Accounting Principles, No. 65, "Property and Casualty Contracts"

AAA, Committee on Property and Liability Financial Reporting, "A Public Policy Practice Note, Statements of Actuarial Opinion on Property and Casualty Loss Reserves"

Commentary on Question:

This item tests a candidate's understanding of the reporting requirements for long-duration general insurance contracts.

Solution:

- (a) Identify two general insurance contract types that are specifically excluded from this rule even when the coverage period is of long-duration.

Commentary on Question:

There are a number of general insurance contract types that are specifically excluded from this rule in SSAP 65. Only two were required for full credit. The model solution is an example of a full credit solution.

- Mortgage guaranty
- Surety

- (b) Identify the second condition.

The insurer can neither cancel the contract, nor increase the premium during the policy or contract term.

6. Continued

- (c) Describe these three tests.

Commentary on Question:

Candidates were not expected to replicate exact wording of the three tests in SSAP 65. Full credit required a description for each test that sufficiently conveyed a proper understanding. The model solution is an example of a full credit solution.

Test 1: Management's best estimate of amounts refundable to the insured at the reporting date.

Test 2: Gross premium times the following value: projected future gross losses and expenses to be incurred during the unexpired term of the contracts divided by projected total gross losses and expenses under the contracts.

Test 3: Projected future gross losses and expenses to be incurred during the unexpired term of the contracts reduced by the present value of the future guaranteed gross premiums (if any).

- (d) Describe what the Statement of Actuarial Opinion (SAO) requires of the Appointed Actuary with respect to the UPR on long duration contracts.

Commentary on Question:

A full credit solution was required to include the following: materiality of the UPR, the fact that the gross and net UPR amounts should be disclosed in the SAO and that the SAO Opinion paragraph should comment on reasonability of the amount. The model solution is an example of a full credit solution.

If the amount is material, the gross and net amounts of UPR for long-duration contracts are required to be disclosed in Section 4 and Exhibit A of the SAO. Even if not material, it is prudent for the amounts to be included in Exhibit A.

Also, if the amount is material, the SAO Opinion paragraph must comment on the reasonability of the UPR for long-duration contracts.

7. Learning Objectives:

4. The candidate will be able to describe the current and historical regulatory environment.

Learning Outcomes:

- (4f) Describe the development of general insurance programs controlled by government or collective insurance industry organizations.
- (4g) Describe the mechanisms of operation for government and/or collective insurance industry-controlled programs as included in the resources.

Sources:

Cappelletti, A., "Government Provision of General Insurance," Society of Actuaries Study Note

AAA Flood Insurance Work Group, "The National Flood Insurance Program: Challenges and Solutions"

Commentary on Question:

This item tests a candidate's understanding of certain program aspects of the government provision of hurricane and flood insurance.

Solution:

- (a) Describe the role of the FHCF in the Florida insurance market.

Commentary on Question:

A full credit solution was required to include the fact that the FHCF is a government run reinsurer and that it provides capacity to private insurers that are exposed to catastrophic losses from hurricanes. The model solution is an example of a full credit solution.

FHCF is a government run reinsurer that provides capacity to private insurers in Florida that are exposed to hurricane risk. It stabilizes the primary market from the private reinsurance availability and affordability issues that have occurred after major hurricanes.

- (b) Explain why FHCF rates can be substantially below market rates.

Commentary on Question:

There are a number of reasons for this. The model solution is an example of a full credit solution.

- It is exempt from federal income taxation
- Its rates do not include a profit load or contingency factor.
- Coverage from FHCF is mandatory, so there are no underwriting or marketing expenses to load into the rates.

7. Continued

- (c) Identify the type of property that would pay a subsidized NFIP rate.

Commentary on Question:

There are several types of properties that would pay a subsidized rate. Only one type was required for full credit. The model solution is an example of a full credit solution.

Properties built before the existence of floodplain management standards for a community.

- (d) The American Academy of Actuaries' Public Policy Monograph, "The National Flood Insurance Program: Challenges and Solutions," asserts that revenue from unsubsidized NFIP rate policies is inadequate.

Explain the reasoning for this assertion.

Commentary on Question:

A full credit solution was required to address the issue of an inadequate implicit volatility loading in the rates. The model solution is an example of a full credit solution.

The implicit volatility loading in the rates is too low to allow the NFIP to operate without a significant likelihood of borrowing that may not be repaid from premiums, assessments, and surcharges over a reasonable time horizon.

- (e) Explain the current plan of the NFIP with respect to borrowed funds.

Commentary on Question:

Widely varying full credit responses are possible. The model solution is an example of a full credit solution.

The NFIP currently owes the Treasury a large amount. The NFIP imposes assessments and surcharges on all policies to pay down this debt. However, these additional charges are insufficient to pay down the debt. Increasing these to a level that would pay down the current debt in a reasonable time frame is not feasible because it would make coverage unaffordable for many.

8. Learning Objectives:

1. The candidate will understand the elements of financial reporting for general insurance companies.

Learning Outcomes:

- (1a) Understand and apply the concepts of insurance accounting.
- (1c) Describe the elements of the NAIC Annual Statement.
- (1d) Complete and interpret selected pages/schedules in the NAIC Annual Statement as included in the resources.
- (1e) Understand and apply the concepts of reinsurance accounting.

Sources:

NAIC Annual Statement

General Insurance Financial Reporting Topics, Fourth Edition, Society of Actuaries

- Chapter 1 (Accounting Systems for General Insurers)
- Chapter 2 (Accounting for Insurance Contracts)
- Chapter 3 (Accounting for Financial Instruments)
- Chapter 4 (Accounting for Reinsurance Contracts)

Commentary on Question:

This item tests a candidate's knowledge of how certain insurance items are presented in the statutory balance sheet.

Solution:

Identify where each item belongs or does not belong in the statutory balance sheet.

- A. Loss Reserves liability
- B. Write in liability as a contra-liability
- C. Write-in deposit asset
- D. Loss Reserves liability as a contra liability
- E. Loss Reserves liability as a contra liability
- F. If it is greater than the calculated Schedule F provision, it is the Provision for Reinsurance liability otherwise it is not on the balance sheet.

9. Learning Objectives:

5. The candidate will be able to understand tort law and insurance law with respect to its impact on the general insurance industry.

Learning Outcomes:

- (5a) Describe and interpret the key elements of tort law and the underlying principles of insurance law.

Sources:

Excerpts from Business Law for Insurance Professionals, Institutes Custom Publishing, Assignment 3 (The International Legal Environment)

Commentary on Question:

This item tests a candidate's knowledge of several key issues in the international legal environment that may affect general insurers.

Solution:

- (a) Describe these two issues as they pertain to private international law.

Comity is the practice by which one country, within its own territory/courts, recognizes another country's court decisions.

Jurisdiction refers to whether a certain territory/court has the right to preside over a particular case of private international law. The issue of jurisdiction must consider both the entity and the subject matter of the case.

- (b) Identify two factors affecting international business that are not legal or financial considerations.

Commentary on Question:

There are many different factors affecting international business that are not legal or financial considerations. Only two were required for full credit. The model solution is an example of a full credit solution.

- Language
- Time differences

- (c) Identify two U.S. federal laws that influence international business.

Commentary on Question:

There are several different U.S. laws that influence international business. Only two were required for full credit. The model solution is an example of a full credit solution.

- Foreign Corrupt Practices Act
- The Patriot Act

10. Learning Objectives:

1. The candidate will understand the elements of financial reporting for general insurance companies.
2. The candidate will understand the analysis of a general insurer's financial health through prescribed formulas, ratios and other solvency regulation methods.

Learning Outcomes:

- (1c) Describe the elements of the NAIC Annual Statement.
- (2b) Understand and apply the elements of the NAIC RBC formula.

Sources:

General Insurance Financial Reporting Topics, Fourth Edition, Society of Actuaries

- Chapter 12 (Solvency Monitoring)

NAIC Annual Statement

Case Study, Spring 2019, SOA Exam General Insurance, Financial and Regulatory Environment – U.S.

Commentary on Question:

This item tests a candidate's ability to calculate the NAIC RBC ACL and knowledge of the Annual Statement to obtain data for its calculation.

Solution:

Calculate R-Dan's NAIC RBC Authorized Control Level (ACL) as of December 31, 2017.

Commentary on Question:

The model solution is a full credit solution assuming that the R_3 adjustment has already been made. It was also acceptable to assume that the R_3 adjustment had not been made and to make the adjustment in the calculation. Note that Page 5 of the Case Study gives the common stock amount for the 10 largest assets by asset name as 6,820. For clarity, the model solution includes some explanatory information that was not required for full credit.

$$\text{NAIC RBC} = R_0 + [R_1^2 + R_2^2 + R_3^2 + R_4^2 + R_5^2 + R_{\text{CAT}}^2]^{0.5}$$

R_0 , R_1 , R_3 , R_4 and R_5 are given. Therefore, we need to calculate R_2 , the equities risk charge, and R_{CAT} , the catastrophe risk charge.

Amounts shown in thousands of dollars.

R_2 before asset concentration is 15% of common stock and 10% of real estate.

Net admitted common stock is 28,400 and real estate is 0.

R_2 before asset concentration = 15% \times 28,400 = 4,260.

10. Continued

Asset concentration doubles the risk charge for the 10 largest “name” issuers for investments, up to a maximum of 30%. The charge is 15% for common stock, so doubling it is an additional 15% for these investments.

$$\text{Therefore } R_2 = 4,260 + 15\% \times 6,820 = 4,260 + 1,023 = 5,283.$$

$$R_{\text{CAT}} = [R_{\text{EQ}}^2 + R_{\text{HUR}}^2]^{0.5}$$

R_{CAT} uses the net 99% VaR for Earthquake and Hurricane only with a 4.8% surcharge for ceded amounts.

$$\begin{aligned} \text{Therefore } R_{\text{CAT}} &= [(2,000 + 0.48\% \times (3,000 - 2,000))^2 + (20,000 + 0.48\% \times \\ & (25,000 - 20,000))^2]^{0.5} \\ &= [2,048^2 + 20,240^2]^{0.5}. \end{aligned}$$

$$\begin{aligned} \text{NAIC RBC} &= R_0 + [R_1^2 + R_2^2 + R_3^2 + R_4^2 + R_5^2 + R_{\text{CAT}}^2]^{0.5} \\ &= 60 + [8,820^2 + 5,283^2 + 2,210^2 + 36,200^2 + 53,110^2 + 2,048^2 + 20,240^2]^{0.5} \\ &= 68,292 \end{aligned}$$

$$\text{ACL} = 50\% \text{ of NAIC RBC} = 34,146$$

$$\text{ACL} = 34.15 \text{ million in dollars}$$

11. Learning Objectives:

1. The candidate will understand the elements of financial reporting for general insurance companies.
2. The candidate will understand the analysis of a general insurer's financial health through prescribed formulas, ratios and other solvency regulation methods.
3. The candidate will be able to apply the standards of practice regarding the responsibilities of the actuary as defined by regulators and the American Academy of Actuaries.

Learning Outcomes:

- (1a) Understand and apply the concepts of insurance accounting.
- (1c) Describe the elements of the NAIC Annual Statement.
- (1d) Complete and interpret selected pages/schedules in the NAIC Annual Statement as included in the resources.
- (2a) Evaluate the financial health of a general insurer using information contained in the Annual Statement.
- (2c) Calculate and interpret the results of financial health ratios.
- (2i) Discuss the function of credit rating agencies and their impact on general insurers.
- (3b) Describe, interpret and apply the responsibilities of the actuary with respect to the Statement of Actuarial Opinion and the Actuarial Report.

Sources:

General Insurance Financial Reporting Topics, Fourth Edition, Society of Actuaries

- Chapter 11 (Measuring Insurer Financial Strength)
- Chapter 12 (Solvency Monitoring)
- Chapter 13 (General Insurance Financial Ratings)
- Chapter 14 (Overview of the General Insurance Statement of Actuarial Opinion)

NAIC Annual Statement

Case Study, Spring 2019, SOA Exam General Insurance, Financial and Regulatory Environment – U.S.

Commentary on Question:

This item tests a candidate's ability to assess aspects of an insurer's financial condition in a given scenario. The candidate must show knowledge that focusing on RBC is too narrow and that there are other factors that may lead to a different conclusion of an insurer's financial health.

11. Continued

Solution:

Describe six concerns or implications. At least two of the six concerns/implications should include quantitative elements.

Commentary on Question:

There are many different concerns or implications that could be described for full credit. Widely varying correct responses are possible. The model solution is an example of full credit solution. The model solution is not an exhaustive list of all of the possible concerns or implications. Full credit required two of the concerns or implications described to include a quantitative element. Model solution points 2 and 3 represent concerns or implications that include a quantitative element. In the model solution, NWP = Net Written Premium and PHS = Policyholders' Surplus.

1. A-Eye's focus on NAIC RBC results for R-Dan is too narrow. While R-Dan's NAIC RBC is well above the minimum, it is only one part of financial health measurement. Much more needs to be considered, such as financial health ratios, as not all measures of financial health come to the same conclusion.
2. R-Dan failed the 2017 2-year operating ratio IRIS test with a result over 100%:
$$\left(\frac{482.1+70.7+386.3+64.4}{578.5+511.6}\right) + \left(\frac{98.2+90.6-2.7-2.4}{607.7+534.5}\right) - \left(\frac{31.9+29.6}{578.5+511.6}\right) = 102.5\%$$
Despite the projections, which show a slim profit for 2018, R-Dan will likely once again fail the 2-year operating ratio IRIS test given the significant planned growth. It should be noted that the failing result is due to results from 2017 which will be included in the 2018 2-year result.
3. Several R-Dan IRIS ratios were just below the threshold for exceptional values. R-Dan's NWP to PHS for 2017 was 2.9 ($=607.7 / 209.4$). This is just under the exceptional value of 3.0. Given the fact that R-Dan's 2018 NWP is expected to be over 680 million, R-Dan will clearly fail this IRIS test in 2018 given A-Eye's plans. R-Dan just passed the reserved development tests. The two-year test for 2017 was just under 20% ($38.9 / 197.8 = 19.7$). It is quite possible that R-Dan could fail these tests in 2018. The failure of multiple IRIS tests will certainly garner regulatory scrutiny.
4. The actions A-Eye is considering will likely lead to a downgrade of R-Dan's financial rating from A.M. Best. This could lead to problems for R-Dan attracting/retaining business. This could also lead to an increase in the cost of reinsurance.
5. The actions A-Eye is considering will reduce R-Dan's ability to handle catastrophic and large losses. This will require R-Dan to obtain more reinsurance, which may be at higher rates with a ratings downgrade.
6. The appointed actuary will need to consider these changes in disclosure of risk for the 2018 actuarial report. This will be viewed negatively as an increase in risk.

12. Learning Objectives:

3. The candidate will be able to apply the standards of practice regarding the responsibilities of the actuary as defined by regulators and the American Academy of Actuaries.

Learning Outcomes:

- (3b) Describe, interpret and apply the responsibilities of the actuary with respect to the Statement of Actuarial Opinion and the Actuarial Report.
- (3d) Describe and apply the concept of materiality.

Sources:

AAA, Committee on Property and Liability Financial Reporting, “A Public Policy Practice Note, Statements of Actuarial Opinion on Property and Casualty Loss Reserves”

AAA, “Materiality, Concepts on Professionalism”

General Insurance Financial Reporting Topics, Fourth Edition, Society of Actuaries

- Chapter 14 (Overview of the General Insurance Statement of Actuarial Opinion)

Case Study, Spring 2019, SOA Exam General Insurance, Financial and Regulatory Environment – U.S.

Commentary on Question:

This item tests a candidate’s knowledge of the concept of materiality and how it relates to the SAO and RMAD.

Solution:

- (a) Identify when it may be preferable for an Appointed Actuary to provide a range of reasonable estimates without a point estimate for unpaid claims.

Commentary on Question:

There are several situations in which this can be preferable to the Appointed Actuary. The model solution is an example of a full credit solution.

An Appointed Actuary should establish a range without a point estimate when there is no point within the range that is more likely than other points within the range.

- (b) Describe “materiality standard” in the context of appointed actuary work.

12. Continued

Commentary on Question:

There a number of ways that the materiality standard can be described in the context of appointed actuary work. The model solution is an example of a full credit solution.

It is a measure of the potential for variability in the carried reserves of an insurer.

- (c) Identify two other methods for selecting the materiality standard that you could consider appropriate.

Commentary on Question:

There are many different methods. Only two were required for full credit. The model solution is an example of a full credit solution.

- Percentage of surplus
- Percentage of income

- (d) Critique Sue Calvin's materiality standard for R-Dan.

Commentary on Question:

Note that the verb "critique" does not mean criticize, it means a detailed analysis and assessment. Widely varying full credit responses were possible for this item. The model solution is an example of a full credit solution.

R-Dan selected a carried reserve equal to 91.5% of Sue Calvin's point estimate on a net basis. The range of reasonability estimates is from 88.7% to 109.8% of the point estimate. The materiality standard selected is only 4.6% of the actuary's point estimate for the reserves. This appears to be on the low side.

- (e) Explain the consequences of using a materiality standard that is very large or very small.

A very large materiality standard decreases the need for an RMAD while a very small standard increases the need for an RMAD.

- (f) Explain the relationship between the materiality standard and the risk of material adverse deviation.

If the sum of the materiality standard and the carried reserves exceeds the upper bound of the actuary's estimate, then material deviation is outside the range of reasonable reserves so there is not a technical need for an RMAD. If the sum is less than the upper bound, there is a need for RMAD disclosure.

12. Continued

- (g) Determine the lowest point in the range of reasonable estimates that R-Dan could have been booked to avoid this need for an RMAD.

If R-Dan's net carried reserves were greater than 334.8 million, there is no technical need for a RMAD as the carried reserves plus the materiality standard would be greater than the high end of the actuarial range of reasonableness.

13. Learning Objectives:

1. The candidate will understand the elements of financial reporting for general insurance companies.

Learning Outcomes:

- (1a) Understand and apply the concepts of insurance accounting.
- (1c) Describe the elements of the NAIC Annual Statement.
- (1d) Complete and interpret selected pages/schedules in the NAIC Annual Statement as included in the resources.
- (1e) Understand and apply the concepts of reinsurance accounting.
- (1g) Demonstrate knowledge of taxation for general insurers in the U.S.

Sources:

General Insurance Financial Reporting Topics, Fourth Edition, Society of Actuaries

- Chapter 7 (Schedule P, Statutory Loss Accounting)

NAIC Annual Statement

Case Study, Spring 2019, SOA Exam General Insurance, Financial and Regulatory Environment – U.S.

Commentary on Question:

This item tests a candidate's knowledge of Schedule P and development triangles.

Solution:

- (a) Calculate the following for R-Dan's Homeowners/Farmowners line of business:
 - (i) Accident Year 2016 development on number of claims closed (direct and assumed) without loss payment from 12 to 24 months.
 - (ii) Accident Year 2016 case basis net losses unpaid, including defense and cost containment expenses unpaid, at 12 months.

Commentary on Question:

These calculations can be displayed in different ways. The model solution is an example of a full credit solution that displays the calculations in tables. In the model solution, AY = Accident Year, Sh. P = Schedule P, and DCC = Defense and Cost Containment expenses.

13. Continued

- (i) Claims closed without loss payment can be derived as reported claims (Sch. P Part 5A Section 3) minus claims outstanding (Sch. P Part 5A Section 2) minus claims closed with loss payment (Sch. P Part 5A Section 1).

Reference	Sch. P Part 5A - AY 2016	2016	2017
(a)	Section 3 - Number of claims reported	13,906	14,758
(b)	Section 2 - Number of claims outstanding	1,028	71
(b)	Section 1 - Claims closed with loss payment	7,883	9,229
(a)-(b)-(c)	Claims closed without payment	4,995	5,458

Therefore, the development on claims closed without payment is 463 (= 5458 – 4995).

- (ii) Claims closed A triangle of net case reserves by accident year may be formed as incurred net loss and DCC (Sch. P Part 2A) minus cumulative paid net losses and DCC (Sch. P Part 3A) minus bulk & IBNR Reserves on Net losses and DCC (Sch. P Part 4A).

Reference	Sch. P for Line A- AY 2016	2016
(d)	Part 2A - Incurred net losses and DCC	94,100
(e)	Part 3A - Cum. Paid net losses and DCC	70,500
(f)	Part 4A - Bulk & IBNR on net losses	13,700
(d)-(e)-(f)	Net case reserves	9,900

- (b) Explain how trends in outstanding claims severity can be derived from Schedule P.

The net case reserves triangle as obtained in (a)(ii) is divided by the number of claims outstanding triangle (Schedule P Part 5A Section 2). A comparison of these values by accident year at the same stage of development show trends in outstanding claim severities.

- (c) Explain when it is not reasonable to use the trends derived in part (b).

Commentary on Question:

There are several reasons as to when it may not be reasonable. The model solution is an example of a full credit solution giving one explanation.

13. Continued

The amounts are net of reinsurance, so it is not reasonable if reinsurance parameters are changing significantly over the years covered in the data.

- (d) Describe what this line item represents.

Deferred Tax Assets represent a timing difference between Statutory Accounting and Tax Accounting. It is not an amount that the IRS owes the company.

14. Learning Objectives:

1. The candidate will understand the elements of financial reporting for general insurance companies.

Learning Outcomes:

- (1g) Demonstrate knowledge of taxation for general insurers in the U.S.

Sources:

General Insurance Financial Reporting Topics, Fourth Edition, Society of Actuaries

- Chapter 15 (Federal Income Taxes for General Insurers)

Commentary on Question:

This item tests a candidate's understanding of the taxation of general insurers in the United States.

Solution:

- (a) Provide the rationale behind the DRD.

Commentary on Question:

For full credit, a response must show a candidate's understanding that the dividend income is partially exempted from taxation in recognition of the fact that the dividend income stream is taxed multiple times (i.e., double taxation or triple taxation). The model solution is an example of a full credit solution.

The DRD partly exempts common stock dividends received by corporate taxpayers from federal taxes to offset the effect of taxing an income stream multiple times.

- (b) Describe the purpose of the proration provision.

Commentary on Question:

For full credit, a response must show a candidate's understanding that the proration provision is used to bring a portion of tax-exempt income back into taxation due to the fact general insurers are the main clientele for tax-exempt municipal bonds. The model solution is an example of a full credit solution.

General insurers receive a significant amount of income from municipal bonds that would otherwise be tax exempt. The purpose of the proration provision is to add 25% of tax-exempt income to taxable income for general insurers so they do not avoid tax on a significant amount of their income.

- (c) Calculate YYZ's federal income tax.

14. Continued

Commentary on Question:

There are several different ways to display this calculation. The model solution is a full credit solution that shows one of the ways to display the calculation. In order to earn full credit, the response was required to explicitly test whether or not the DRD is limited. Most candidates missed this test. In the model solution M = million.

$$\text{Taxable Income before DRD} = -1.0\text{M} + 1.2\text{M} + 0.8\text{M} = 1.0\text{M}$$

Condition A or B have to be met to have an unlimited DRD.

Condition A: Taxable income before DRD > Unaffiliated Dividends Received.

Condition B: Taxable income before DRD < Full DRD (before proration).

In this case, Condition A is met ($1.0\text{M} > 0.8\text{M}$) so the DRD is not limited.

Unlimited DRD before proration

$$= 50\% \text{ of Unaffiliated Dividends Received} = 50\% \times 0.8\text{M} = 0.4\text{M}$$

$$\text{Proration} = 25\% \text{ of tax-exempt income} = 25\% \text{ of DRD} = 25\% \times 0.4\text{M} = 0.1\text{M}$$

$$\text{DRD after proration} = \text{DRD} - \text{Proration} = 0.4\text{M} - 0.1\text{M} = 0.3\text{M}$$

$$\begin{aligned} \text{Taxable Income} &= \text{Taxable Income before DRD} - \text{DRD after proration} \\ &= 1.0\text{M} - 0.3\text{M} = 0.7\text{M} \end{aligned}$$

$$\text{Federal Income Tax} = \text{Tax Rate} \times \text{Taxable Income} = 21\% \times 0.7\text{M} = 0.147\text{M}$$

15. Learning Objectives:

1. The candidate will understand the elements of financial reporting for general insurance companies.

Learning Outcomes:

- (1a) Understand and apply the concepts of insurance accounting.
- (1b) Compare different financial reporting standards for general insurers including: U.S. Statutory Account Principles (SAP), U.S. Generally Accepted Accounting Principles (GAAP), Canadian Generally Accepted Accounting Principles (CGAAP), Solvency II and International Financial Reporting Standards (IFRS)
- (1g) Demonstrate knowledge of taxation for general insurers in the U.S.

Sources:

- General Insurance Financial Reporting Topics, Fourth Edition, Society of Actuaries
- Chapter 9 (Measuring Total Income by Line of Business)

Commentary on Question:

This item tests a candidate's understanding of different perspectives for income recognition (fair value vs operating income as outlined in Chapter 9 of General Insurance Financial Reporting Topics) and the difficulty in allocating income tax by line of business.

Solution:

- (a) Identify the income recognized as coming from INV under a fair value accounting perspective for each of IC and C&S.

IC: Excess investment yields above fair value rate
C&S: Income from excess capital funds
- (b) Identify the income recognized as coming from UW under a fair value accounting perspective for each of IC and C&S.

IC: Fair value premiums less fair value losses
C&S: Income from the cost of holding required capital
- (c) Describe a major drawback of accounting for income:
 - (i) Using a fair value accounting perspective
 - (ii) Using this operating income perspective

15. Continued

Commentary on Question:

There are a couple of major drawbacks for each perspective. Only one major drawback for each perspective was required for full credit. The model solution is an example of a full credit response.

- (i) Using a fair value perspective
There is no clear-cut appropriate fair value discount rate for unpaid losses. The choice is somewhat subjective. Should it be risk-free market rate, risk-adjusted rate, a benchmark rate, or a rate based on the company's invested assets?
- (ii) Using an operating income perspective
There is a mismatch of underwriting income with investment income. Underwriting income depends on insurance written in the current year, but investment income depends on total assets which includes supports for loss reserves for business from prior years.
- (d) Explain why an allocation of income tax by line of business is complicated.

Commentary on Question:

There are many different reasons why the allocation is complicated. For full credit, an explanation should include at least two reasons. The model solution is an example of a full credit response and includes two of the reasons.

- Income taxes are levied on the legal entity, not lines of business.
- Tax rates on investment income differ by asset class. But which assets support which lines of business?

16. Learning Objectives:

1. The candidate will understand the elements of financial reporting for general insurance companies.

Learning Outcomes:

- (1a) Understand and apply the concepts of insurance accounting.
- (1c) Describe the elements of the NAIC Annual Statement.
- (1h) Estimate the premium asset for retrospectively rated policies for financial reporting.

Sources:

Teng, M. and Perkins, M., “Estimating the Premium Asset on Retrospectively Rated Policies”

General Insurance Financial Reporting Topics, Fourth Edition, Society of Actuaries

- Chapter 2 (Accounting for Insurance Contracts)

NAIC Annual Statement

NAIC Statement of Statutory Accounting Principles

- No. 66, “Retrospectively Rated Contracts”

Commentary on Question:

This item tests a candidate’s understanding of the procedure to estimate the premium asset on retrospectively rated policies and the method to record additional retrospective premiums under U.S. statutory accounting.

Solution:

- (a) Explain why this is typically expected of PDL ratios.

Commentary on Question:

The model solution is an example of a full credit solution.

The basic premium is included in the first retro premium computation and the loss conversion factor and tax multiplier are applied to the loss. As time goes on, more of the loss is limited by the retro maximum or per accident limitation.

- (b) Calculate the total premium asset on retrospectively rated policies as of December 31, 2018 arising from policy years 2015 to 2017.

Commentary on Question:

The model solution is an example of a full credit solution.

16. Continued

$$\text{CPDLLD}_1 = (50\% \times 1.80 + 35\% \times 0.65 + 15\% \times 0.50) / (50\% + 35\% + 15\%) = 1.2025$$

$$\text{CPDLLD}_2 = (35\% \times 0.65 + 15\% \times 0.50) / (35\% + 15\%) = 0.605$$

$$\text{CPDLLD}_3 = (15\% \times 0.50) / 15\% = 0.50$$

$$\begin{aligned} \text{Expected Future Premium} &= \sum_{PY} \text{Expected future loss emergence} \times \text{CPDLLD} \\ &= 1.2025 \times 200,000 + 0.605 \times 90,000 + 0.5 \times 30,000 = 309,950 \end{aligned}$$

$$\begin{aligned} \text{Expected Total Premium} &= \text{Premium booked from prior adjustment} + \text{Expected Future Premium} \\ &= (210,000 + 220,000 + 0) + 309,950 = 739,950 \end{aligned}$$

$$\begin{aligned} \text{Premium Asset} &= \text{Expected Total Premium} - \text{Current Premium Booked} \\ &= 739,950 - (215,000 + 235,000 + 260,000) = 29,950 \end{aligned}$$

- (c) Describe the methods as specified in SSAP No. 66.

Commentary on Question:

The model solution is an example of a full credit solution.

- Accrued additional retrospective premiums shall be recorded as a receivable with a corresponding entry made either to written premiums or as an adjustment to earned premiums.
- Premiums not recorded through written premium when accrued shall be recorded through written premium when billed.

17. Learning Objectives:

2. The candidate will understand the analysis of a general insurer's financial health through prescribed formulas, ratios and other solvency regulation methods.

Learning Outcomes:

- (2b) Understand and apply the elements of the NAIC RBC formula.
- (2f) Demonstrate knowledge of the E.U. Solvency II standard formula solvency capital requirement.
- (2h) Compare different solvency standards.
- (2i) Discuss the function of credit rating agencies and their impact on general insurers.

Sources:

General Insurance Financial Reporting Topics, Fourth Edition, Society of Actuaries

- Chapter 12 (Solvency Monitoring)
- Chapter 13 (General Insurance Financial Ratings)

Commentary on Question:

This item tests a candidate's knowledge of different measurements of capital and of insurer financial ratings.

Solution:

- (a) Provide the following for each of the three capital standard formulas above:
 - (i) Whether or not interest rate risk is explicitly included.
 - (ii) If interest rate risk is explicitly included, how it is included.
 - (iii) The rationale for explicitly including or excluding interest rate risk.

Commentary on Question:

The model solution is an example of a full credit solution.

- (i)
 - RBC: No
 - BCAR-NRC: Yes
 - SCR: Yes

17. Continued

(ii)

- BCAR-NRC includes it as one of the individual risks under the square root rule.
- SCR includes it as one of the market risks with correlations to other market risks. The market risk charge is correlated with the GI underwriting risk charge.

(iii)

- It is excluded in the RBC charge because the formula uses amortized value of bonds and undiscounted reserves that are not affected by interest rate changes.
- It is included in both BCAR-NRC and SCR because they use market values for bonds and discounted reserves that are affected by interest rate changes.

- (b) Compare RBC with BCAR-NRC with respect to the treatment of catastrophe risk.

Commentary on Question:

There are a number of factors that can be compared. A full credit comparison was required to compare several factors. The model solution is an example of a full credit solution.

Both formulas include it under the square root rule. RBC is limited to earthquake and windstorm. BCAR-NRC also includes casualty and terrorism catastrophe risk charges in addition to earthquake and windstorm.

- (c) Identify two reasons why an insurer with a financial rating from one rating agency may seek a rating from another rating agency.

Commentary on Question:

There are more than two reasons. Only two reasons were required for full credit. The model solution is an example of a full credit solution.

- It is dissatisfied with its current rating and believes a rating from another rating agency will be higher.
- It requires a rating from another agency due to specific expertise of the other rating agency (e.g., bond rating).

- (d) Explain why it is particularly important for reinsurers to receive a strong financial rating.

17. Continued

Commentary on Question:

There are many factors that could be commented on to explain this. Not all were expected for full credit. The model solution is an example of a full credit solution and includes two of the factors that explain this.

- Some reinsurers provide letters of credit or other collateral to secure their obligations, but security is expensive. A financial rating can be more cost effective.
 - Some insurers require a reinsurer to have financial rating of a specified strength to be able to reinsure its business.
- (e) Explain why insurers would generally pay for a subsequent rating despite the possibility of a ratings downgrade.

Commentary on Question:

The model solution is an example of a full credit solution.

Insurers who do not pay for subsequent ratings may receive public ratings using publicly available information. The public rating will replace the previous rating and the rating agency may make conservative assumptions. The public rating may be worse than a rating where the company can explain any negative issues it is experiencing.

18. Learning Objectives:

5. The candidate will be able to understand tort law and insurance law with respect to its impact on the general insurance industry.

Learning Outcomes:

- (5a) Describe and interpret the key elements of tort law and the underlying principles of insurance law.

Sources:

Excerpts from Business Law for Insurance Professionals, Institutes Custom Publishing, Assignment 1 (Contract Law: Insurance Applications)

Commentary on Question:

This item tests a candidate's understanding of some aspects of insurance contract law.

Solution:

- (a) Compare the following processes that an insurer can use to protect its rights under policy terms.
 - (i) Nonwaiver agreement
 - (ii) Reservation of rights letter

Commentary on Question:

The model solution is an example of a full credit solution.

Both protect the insurer from estoppel by reserving the right to deny coverage based on information developed during a claims investigation. Both alert the insured to potential coverage issues.

A nonwaiver agreement must be signed by both insurer and insured whereby the insured agrees to it. A reservation of rights letter is a unilateral document which does not require the signature or agreement of the insured. While a reservation of rights letter isn't as strong as a nonwaiver agreement, it can still be effective on protecting the rights of the insurer if the insurer can prove that the insured received the letter.

- (b) Explain how a *direct-action statute* affects a liability insurer.

Commentary on Question:

The model solution is an example of a full credit solution.

18. Continued

Ordinarily, a negligence victim sues the wrongdoer. The wrongdoer's insurer then pays any judgement against the wrongdoer to the negligence victim according to the terms of the policy. Under a direct-action statute, the negligence victim is permitted to sue the wrongdoer's insurer directly or to sue the wrongdoer and their insurer jointly.

19. Learning Objectives:

1. The candidate will understand the elements of financial reporting for general insurance companies.
3. The candidate will be able to apply the standards of practice regarding the responsibilities of the actuary as defined by regulators and the American Academy of Actuaries.

Learning Outcomes:

- (1a) Understand and apply the concepts of insurance accounting.
- (1c) Describe the elements of the NAIC Annual Statement.
- (3a) Describe, interpret and apply the applicable Standards of Practice.
- (3b) Describe, interpret and apply the responsibilities of the actuary with respect to the Statement of Actuarial Opinion and the Actuarial Report.

Sources:

General Insurance Financial Reporting Topics, Fourth Edition, Society of Actuaries

- Chapter 14 (Overview of the General Insurance Statement of Actuarial Opinion)

AAA, Committee on Property and Liability Financial Reporting, “A Public Policy Practice Note, Statements of Actuarial Opinion on Property and Casualty Loss Reserves”

Actuarial Standards Board, Actuarial Standard of Practice

- No. 36, Statements of Actuarial Opinion Regarding Property/Casualty Loss and Loss Adjustment Expense Reserves
- No. 43, Property/Casualty Unpaid Claim Estimates

NAIC Statement of Statutory Accounting Principles No. 55, “Unpaid Claims, Loss and Loss Adjustment Expenses”

Commentary on Question:

This item tests a candidate’s understanding of various facts regarding the SAO.

Solution:

- (a) Identify the following users of the Actuarial Report.
 - (i) An intended primary user
 - (ii) A potential secondary user

19. Continued

Commentary on Question:

There are two intended primary users and many potential secondary users. Only one of each was required for full credit. The model solution is an example of a full credit solution.

- (i) Regulator
 - (ii) Auditor
- (b) Contrast the circumstances that might cause an appointed actuary to issue a “Qualified Opinion” versus a “No Opinion.”

Commentary on Question:

The model solution is an example of a full credit solution.

Qualified Opinions relate to the following circumstances: Reserves for certain item(s) cannot be reasonably estimated and these reserves are material.

No Opinions relate to the following circumstances: A conclusion cannot be reached due to deficiencies or limitations in the data, analyses, assumptions or related info.

- (c) Compare the following two requirements regarding reserves:
- (i) ASOP No. 43 requires that the unpaid claim estimate be reasonable.
 - (ii) SSAP No. 55 requires reserves to be management’s best estimate of liabilities.

Commentary on Question:

There are several correct ways to respond to this item. The model solution is an example of a full credit solution.

Regarding reasonability, ASOPs require the actuary to assess the reasonableness of the unpaid claim estimate using appropriate indicators or tests that in the actuary’s professional judgment provide a validation that the unpaid claim estimate is reasonable.

Management’s best estimate can differ from the estimate determined by the Appointed Actuary. *Best estimate* is not defined in the SSAPs other than the fact that the best estimate must lie within a realistic range

19. Continued

- (d) Describe the actions that the Appointed Actuary should take in response to this change.

Commentary on Question:

There are a number of actions that should be taken. Only three were required for full credit. The model solution is an example of a full credit solution.

The Appointed Actuary should:

- Determine materiality of this error with respect to the Opinion.
- Discuss the effects of this error with the Board of Directors and/or Company Management.
- Re-issue the Opinion if indicated.

20. Learning Objectives:

4. The candidate will be able to describe the current and historical regulatory environment.

Learning Outcomes:

- (4f) Describe the development of general insurance programs controlled by government or collective insurance industry organizations.
- (4g) Describe the mechanisms of operation for government and/or collective insurance industry-controlled programs as included in the resources.

Sources:

Cappelletti, A., "Government Provision of General Insurance," Society of Actuaries Study Note

Commentary on Question:

This item tests a candidate's understanding of the development and operation of the U.S. federal government's terrorism insurance program.

Solution:

- (a) Explain why the U.S. Congress adopted TRIA in 2002.

Commentary on Question:

There are various ways that one can correctly respond to this item. The model solution is an example of a full credit solution.

Prior to the terrorist attack on Sept. 11, 2001, the private insurance market covered losses from terrorist acts. Insured losses from the terrorist attack on Sept. 11, 2001 were unprecedented. Insurers quickly moved to exclude coverage for acts of terrorism.

Investors and lenders require protection of their investments in the form of insurance. The government believed that a lack of availability and affordability of insurance coverage for terrorism risk would pose a threat to the economy due to loan defaults and a reduction in investments.

TRIA was adopted to restore availability and affordability of insurance coverage for terrorism risk in the private market.

20. Continued

- (b) Explain how TRIA can be considered reinsurance.

Commentary on Question:

The model solution is an example of a full credit solution.

It functions as a catastrophe excess cover for terrorism with the government acting as reinsurer covering an insurer's terrorism losses above a stipulated deductible.

- (c) Explain how TRIA operates differently from traditional reinsurance.

Commentary on Question:

The model solution is an example of a full credit solution.

It is not true reinsurance in the sense that insurers do not pay a reinsurance premium to the government for the protection provided. Coverage is provided to insurers when losses exceed a legislated threshold referred to as the insurance marketplace aggregate retention.

- (d) Identify two lines of business, written on a direct basis for commercial lines, that are specifically excluded from TRIA coverage.

Commentary on Question:

There are a number of lines excluded. Only two were required for full credit. The model solution is an example of a full credit solution.

- Commercial automobile insurance
- Crop insurance

21. Learning Objectives:

4. The candidate will be able to describe the current and historical regulatory environment.

Learning Outcomes:

- (4f) Describe the development of general insurance programs controlled by government or collective insurance industry organizations.
- (4g) Describe the mechanisms of operation for government and/or collective insurance industry-controlled programs as included in the resources.

Sources:

Facility Association, "Considerations for Residual Market Regulation"

Commentary on Question:

This item tests a candidate's understanding of residual markets and their regulation.

Solution:

- (a) Describe this relationship.

The closer the average residual premiums are to those of the total market, the higher the residual market share.

- (b) Identify two types of costs that non-monetary barriers can create.

Commentary on Question:

There are more than two types of costs. Only two were required for full credit. The model solution is an example of a full credit response.

- Compliance
- Administration

- (c) Describe the requirements of the binder control registry as implemented.

- Broker/agent must record why a car/driver is being insured through the residual market.
- Broker/agent must affirm that the applicant was informed that the insurance was being placed through the residual market.

- (d) Describe the general requirement for insurers to comply with "take all comers" regulation.

The insurer must accept all business that meets the underwriting guidelines that it has filed with the regulator.

21. Continued

- (e) Identify two potential effects on the market of “take all comers” regulation.

Commentary on Question:

There are several potential effects. Only two were required for full credit. The model solution is an example of a full credit response.

- Broker cancellations
- Insurers leave the market

- (f) Describe two types of non-monetary barriers, other than a binder control registry or “take all comers” regulation.

Commentary on Question:

There are several non-monetary barriers. Only two were required for full credit. The model solution is an example of a full credit response.

- Requiring consumers applying for insurance through residual markets to have one or more prior declination letters from voluntary market insurers.
- Capping or limiting broker commissions in residual markets.

- (g) Explain two market consequences of suppressing residual market rates.

Commentary on Question:

There are several market consequences. Only two were required for full credit. The model solution is an example of a full credit response.

- Residual market populations rise as some insureds find they can get a better deal than in the risk-based voluntary market.
- If insurers cannot pass the cost of the residual market subsidies on to voluntary market insureds, they may exit the market.

22. Learning Objectives:

5. The candidate will be able to understand tort law and insurance law with respect to its impact on the general insurance industry.

Learning Outcomes:

- (5e) Describe and interpret legal cases/issues included in the syllabus resources.

Sources:

Cappelletti, A., "Tort Law: Topics for General Insurance Actuaries," Society of Actuaries Study Note

Commentary on Question:

This item tests a candidate's understanding of the criteria for admitting expert testimony in a tort case as decided by the Supreme Court (Daubert vs. Merrell Dow Pharmaceuticals) and the effect of this decision on later cases.

Solution:

- (a) Identify three of the factors provided by the Supreme Court that may be considered when assessing the admissibility of expert witness testimony.

Commentary on Question:

There are more than three factors. Only three were required for full credit. The model solution is an example of a full credit solution.

1. Whether the science has been tested
2. Whether the science has been subject to peer review and publication
3. Whether the science has a known rate of error

- (b) Describe three findings of the RAND report.

Commentary on Question:

There were five findings in the report. Only three were required for full credit. The model solution is an example of a full credit solution.

1. Judges initially looked at all of the factors noted by the Supreme Court decision, but then focused on clarity and coherence more.
2. Acceptance by expert community is an important factor.
3. Exclusion of expert evidence is fatal to a case.