Exam 6US

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April 28, 2015

4 HOURS

INSTRUCTIONS TO CANDIDATES

1. This 81.25 point examination consists of 26 problem and essay questions.

2. For the problem and essay questions, the number of points for each full question and part of a question is indicated at the beginning of the question or part. Answer these questions on the lined sheets provided in your Examination Envelope. Use dark pencil or ink. Do not use multiple colors or correction fluid/tape.

   - Write your Candidate ID number and the examination number, 6US, at the top of each answer sheet. Your name, or any other identifying mark, must not appear.
   - Do not answer more than one question on a single sheet of paper. Write only on the front lined side of the paper – **DO NOT WRITE ON THE BACK OF THE PAPER.** Be careful to give the number of the question you are answering on each sheet. If your response cannot be confined to one page, please use additional sheets of paper as necessary. Clearly mark the question number on each page of the response in addition to using a label such as "Page 1 of 2" on the first sheet of paper and then "Page 2 of 2" on the second sheet of paper.
   - The answer should be concise and confined to the question as posed. When a specific number of items is requested, do not offer more items than the number requested. For example, if three items are requested, only the first three responses will be graded.
   - In order to receive full credit or to maximize partial credit on mathematical and computational questions, you must clearly outline your approach in either verbal or mathematical form, showing calculations where necessary. Also, you must clearly specify any additional assumptions you have made to answer the question.

3. Do all problems until you reach the last page of the examination where "END OF EXAMINATION" is marked.

All questions should be answered according to the United States statutory accounting practices and principles, unless specifically instructed otherwise. SAP refers to Statutory Accounting Principles, and GAAP refers to Generally Accepted Accounting Principles. NAIC refers to the National Association of Insurance Commissioners.

CONTINUE TO NEXT PAGE OF INSTRUCTIONS

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4. Prior to the start of the exam you will have a **fifteen-minute reading period** in which you can silently read the questions and check the exam booklet for missing or defective pages. A chart indicating the point value for each question is attached to the back of the examination. Writing will NOT be permitted during this time and you will not be permitted to hold pens or pencils. You will also not be allowed to use calculators. The supervisor has additional exams for those candidates who have defective exam booklets.

5. Your Examination Envelope is pre-labeled with your Candidate ID number, name, exam number and test center. Do not remove this label. Keep a record of your Candidate ID number for future inquiries regarding this exam.

6. Candidates must remain in the examination center until two hours after the start of the examination. The examination starts after the reading period is complete. You may leave the examination room to use the restroom with permission from the supervisor. To avoid excessive noise during the end of the examination, candidates may not leave the exam room during the last fifteen minutes of the examination.

7. At the end of the examination, place all answer sheets in the Examination Envelope. Please insert your answer sheets in your envelope in question number order. Insert a numbered page for each question, even if you have not attempted to answer that question. Nothing written in the examination booklet will be graded. Only the answer sheets will be graded. Also place any included reference materials in the Examination Envelope. BEFORE YOU TURN THE EXAMINATION ENVELOPE IN TO THE SUPERVISOR, BE SURE TO SIGN IT IN THE SPACE PROVIDED ABOVE THE CUT-OUT WINDOW.

8. If you have brought a self-addressed, stamped envelope, you may put the examination booklet and scrap paper inside and submit it separately to the supervisor. It will be mailed to you. Do not put the self-addressed stamped envelope inside the Examination Envelope. Interoffice mail is not acceptable.

   If you do not have a self-addressed, stamped envelope, please place the examination booklet in the Examination Envelope and seal the envelope. You may not take it with you. Do not put scrap paper in the Examination Envelope. The supervisor will collect your scrap paper.

   Candidates may obtain a copy of the examination from the CAS Web Site.

   All extra answer sheets, scrap paper, etc. must be returned to the supervisor for disposal.

9. Candidates must not give or receive assistance of any kind during the examination. Any cheating, any attempt to cheat, assisting others to cheat, or participating therein, or other improper conduct will result in the Casualty Actuarial Society and the Canadian Institute of Actuaries disqualifying the candidate's paper, and such other disciplinary action as may be deemed appropriate within the guidelines of the CAS Policy on Examination Discipline.

10. The exam survey is available on the CAS Web Site in the "Admissions/Exams" section. Please submit your survey by May 15, 2015.

END OF INSTRUCTIONS

1. (2.75 points)

   a. (0.5 point)

   Describe the primary purpose of rate regulation.

   b. (2.25 points)

   For each of the following lines of business, briefly describe the degree of regulatory scrutiny with respect to ratemaking, and provide two supporting reasons for it.

   - Homeowners insurance
   - Title insurance
   - Commercial cyber liability insurance

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2. (2 points)

Consider the following statement: Financial rating agencies have implicit regulatory power over insurance companies.

a. (1 point)

Discuss two reasons why this statement has merit.

b. (1 point)

Discuss two arguments against this statement.

3. (2.75 points)

   a. (0.75 point)

      Identify three arguments the Supreme Court used in its ruling against the South-Eastern Underwriters Association (SEUA).

   b. (0.5 point)

      Briefly describe two ways in which the Gramm-Leach-Bliley Act extends the influence of the federal government in insurance regulation.

   c. (0.5 point)

      Briefly describe two ways in which the Dodd-Frank Act extends the influence of the federal government in insurance regulation.

   d. (1 point)

      Discuss one argument in favor of federal insurance regulation and one argument in favor of state insurance regulation.

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4. (3 points)

A financially-troubled insurer is considering the following strategies to improve its financial situation:

- Reduce rates to attract more business.
- Use swaps or other derivatives to generate additional investment income.

a. (1 point)

For each of the strategies above, identify a piece of federal legislation that applies and briefly describe how this legislation applies.

b. (1 point)

For each of the strategies above, describe one way in which other insurers may benefit.

c. (1 point)

For each of the strategies above, describe one way in which consumers may be harmed.

CONTINUED ON NEXT PAGE

5. (3.25 points)

During the last several years, a multi-state insurer has experienced rapid growth in written premium and an increase in its underwriting expense ratio.

a. (0.5 point)

Explain why a regulator might be concerned with the financial health of the company.

b. (1 point)

Briefly describe two IRIS ratios that should be investigated and their relevance to this situation.

c. (0.5 point)

The regulator in the company's state of domicile has not yet decided to examine the company. Briefly describe two options that are available to non-domiciliary regulators to assess the insurer's financial health.

d. (0.75 point)

Fully describe the NAIC accreditation program.

e. (0.5 point)

Describe the extent to which the accreditation process may be relevant to the situation described in part c. above.

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6. (3 points)

It has been discovered that a chemical contained in office chairs emits odorless, noxious fumes that cause terminal illness after 10 years of exposure. Recently, the first court to review coverage has found that a standard commercial general liability policy will cover this environmental liability exposure.

a. (1 point)

Assume that many insurance companies become technically insolvent as a result of this mass tort exposure. However, one company has recognized only 10% of the exposure of other companies with a similar size and mix of business.

Describe how a rating agency might assess this company for financial rating purposes, and briefly describe why IRIS ratios 1 and 11 should be reviewed.

b. (1 point)

A reinsurer's rating is downgraded from A to BBB by A.M. Best as a result of the reinsurer's need to increase reserves by $1 billion to cover the chair exposure. Discuss two negative business consequences to reinsureds that may result from the rating downgrade of the reinsurer.

c. (1 point)

Assume a national settlement is reached where each known injured party is awarded a one-time payment. Briefly describe two disadvantages to claimants and two advantages to insurers as a result of this settlement.

CONTINUED ON NEXT PAGE

7. (2.75 points)

   a. (0.75 point)

      For each of the following types of insurance, briefly describe the extent to which private insurers provide coverage.

      - Crop insurance
      - Unemployment insurance
      - Terrorism insurance

   b. (1 point)

      For each of the following government insurance programs, briefly describe a unique social cost, and propose a change to each program that could mitigate the cost.

      - Federal Crop Insurance Program
      - Federal-State Unemployment Insurance Program

   c. (1 point)

      Describe one argument that supports and one argument that refutes the following statement: The Terrorism Risk Insurance Program is necessary.

CONTINUED ON NEXT PAGE

8. (3.25 points)

   a. (0.75 point)

   Identify three advantages of reinsurance facilities over other residual market mechanisms.

   b. (0.25 point)

   Briefly describe one similarity between Joint Underwriting Associations (JUAs) and reinsurance facilities.

   c. (0.25 point)

   Briefly describe one similarity between JUAs and assigned risk plans.

   d. (0.5 point)

   From the perspective of a high-risk policyholder, describe which of the following residual market mechanism might be the least preferred:

   - JUAs
   - Reinsurance facilities
   - Assigned risk plans

   e. (0.5 point)

   State A imposes minimal restrictions on risk classification for private passenger automobile insurance, while State B imposes significant restrictions. Compare the likely size of the residual market in each of these states.

   f. (1 point)

   Identify two courses of action that insurers might pursue due to the restrictions imposed by State B, and briefly describe the resulting impact on the size of the residual market for each of these actions.

CONTINUED ON NEXT PAGE

9. (2 points)

   a. (0.5 point)

      Provide two reasons for government involvement in providing flood coverage.

   b. (0.5 point)

      Describe the statutory mandate of the National Flood Insurance Program (NFIP).

   c. (0.5 point)

      Describe the impact of moral hazard on the NFIP.

   d. (0.5 point)

      Describe the impact of adverse selection on the NFIP.

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10. (3 points)

a. (0.25 point)

Briefly describe what it means for an insurance program to be fully funded.

b. (0.75 point)

Briefly describe three reasons why it is not necessary for the Social Security program to be fully funded.

c. (0.5 point)

Identify two eligibility requirements for a U.S. citizen at normal retirement age to receive retirement benefits under the Social Security program.

d. (1 point)

Other than retirement benefits, identify two major benefits administered by the Social Security Program, and briefly describe the eligibility requirements for each benefit.

e. (0.5 point)

Describe the purpose of the indexing method in calculating monthly retirement benefits under the Social Security program.

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11. (3 points)

a. (0.5 point)

Identify two elements shown in either the statutory Balance Sheet or Statement of Income that would help a regulator assess the credit risk that an insurance company faces.

b. (1 point)

Evaluate the effectiveness of each of the elements identified in part a. above in assessing the credit risk that an insurance company faces.

c. (0.5 point)

Identify the name of two Notes to Financial Statements that would help a regulator assess the credit risk that an insurance company faces.

d. (1 point)

Evaluate the effectiveness of each of the Notes identified in part c. above in enabling a regulator to assess the credit risk that an insurance company faces.

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12. (3.5 points)

The following excerpts are from a company's 2013 Annual Statement (all figures are in thousands of dollars):

ASSETS				
	Current Year			Prior Year
	Assets	Nonadmitted Assets	Net Admitted Assets	Net Admitted Assets
Cash	13,000	0	13,000	11,100
Stocks	1,200	250	950	900
Deferred premiums and agents' balances	2,000	150	1,850	0
Total	16,200	400	15,800	12,000

LIABILITIES, SURPLUS AND OTHER FUNDS		
	Current Year	Prior Year
Losses	8,500	5,500
Loss adjustment expenses	500	500
Unearned premiums	1,200	1,000
Total liabilities	10,200	7,000
Surplus as regards policyholders	5,600	5,000

Net investment income earned	25
Net realized capital gains	75
Change in net unrealized capital gains	50
Dividends to policyholders	5
Dividends to stockholders	100
Nonadmitted assets as of December 31, 2012	225

The company's reserving actuary asserts that the company's significant increase in liabilities for Losses & Loss adjustment expenses in 2013 was due to reasons other than reserve inadequacy.

a. (1.25 points)

Calculate the insurance company's 2013 net income.

b. (2.25 points)

Identify three Exhibits, Notes, Interrogatories, or Schedules in the Annual Statement that could support the reserving actuary's assertion. Describe how each could support the actuary's assertion.

CONTINUED ON NEXT PAGE

13. (4.25 points)

Given the following information for an insurance company (all figures are in thousands of dollars):

	2012	2013
Net Investment Earned	1,785	3,000
Net Realized Capital Gains	15,000	18,000
Total Policyholder's Surplus	133,000	157,000
Homeowners Total Investment Gain	10,000	10,530

	Homeowners		Total	
	2012	2013	2012	2013
Commission	13,600	14,000	26,400	28,000
Taxes, Licenses, and Fees	1,360	1,400	2,640	2,800
Other Acquistion Expenses	3,400	3,500	6,600	7,000
General Expenses	4,760	5,520	10,320	10,800
Written Premium	68,000	70,000	132,000	140,000
Earned Premium	59,500	69,000	129,000	135,000
Loss and LAE Reserves	23,800	27,600	51,600	54,000
Unearned Premium Reserves	28,560	29,400	55,440	58,800
Agents' Balances	6,800	7,000	13,200	14,000
Net Loss and LAE Incurred	40,800	42,000	79,200	84,000
Finance Charges not included in Premium	2,040	2,100	3,960	4,200
Fines & Penalties of Regulatory Authorities	600	690	1,290	1,350

a. (3.75 points)

Calculate the 2013 total pre-tax profit (or loss) as a percentage of allocated policyholders' surplus for homeowners. Assume that both the surplus and the investment gain are allocated using the NAIC's prescribed method for Insurance Expense Exhibit (IEE) purposes.

b. (0.5 point)

Explain why the NAIC's prescribed method of allocating surplus in the IEE may not be appropriate for all lines of business.

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14. (3 points)

The following excerpts have been provided from an insurer's 2013 Schedule P (figures other than claims counts are in thousands of dollars):

Part 2D - Incurred Net Losses & DCC

	2009	2010	2011	2012	2013
2009	1,138	1,049	1,129	1,071	938
2010	XXX	1,138	1,110	899	748
2011	XXX	XXX	1,187	874	625
2012	XXX	XXX	XXX	1,112	958
2013	XXX	XXX	XXX	XXX	956

Part 5D Section 1 - Claims Closed with Loss Payment

	2009	2010	2011	2012	2013
2009	9	17	20	23	25
2010	XXX	9	14	18	19
2011	XXX	XXX	5	11	12
2012	XXX	XXX	XXX	3	7
2013	XXX	XXX	XXX	XXX	3

Part 5D Section 2 - Claims Outstanding

	2009	2010	2011	2012	2013
2009	13	9	5	6	2
2010	XXX	13	6	2	1
2011	XXX	XXX	7	2	-
2012	XXX	XXX	XXX	4	3
2013	XXX	XXX	XXX	XXX	3

Part 5D Section 3 - Claims Reported

	2009	2010	2011	2012	2013
2009	40	57	60	76	78
2010	XXX	37	44	47	49
2011	XXX	XXX	21	28	29
2012	XXX	XXX	XXX	14	21
2013	XXX	XXX	XXX	XXX	15

Part 6D, Section 1 - Premiums Earned (Direct & Assumed)

	2009	2010	2011	2012	2013
2009	2,104	2,695	2,731	2,727	2,728
2010	XXX	1,389	1,655	1,667	1,669
2011	XXX	XXX	1,889	1,952	1,947
2012	XXX	XXX	XXX	2,032	2,062
2013	XXX	XXX	XXX	XXX	1,788

a. (2.5 points)

Using at least two of the triangles shown above, perform a trend analysis, briefly describe its purpose, and briefly explain the result.

b. (0.5 point)

Briefly describe two limitations of Schedule P data that should be considered when performing the trend analysis in part a. above.

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15. (4 points)

A primary insurance company enters into a 50% straight quota share reinsurance agreement with one authorized reinsurance company covering losses occurring during 2013. The reinsurance contract does not specify the date by which claims are to be paid by the reinsurer or when the primary insurer is required to notify the reinsurer of a covered loss. The primary insurer enters a paid loss recoverable into its financial accounts on the day the loss is paid. The primary insurer's known claim information for accident year 2013 as of December 31, 2013 is as follows (all figures are in thousands of dollars):

Claim Number	Accident Date	Date Primary Paid the Loss	Date Reinsurer Paid	Gross Paid Loss	Reinsurer Paid Loss
1	January 1	February 1	August 1	50	25
2	March 1	May 1	November 1	74	37
3	July 1	August 1	Not yet paid	110	0
4	August 1	September 1	Not yet paid	130	0
5	October 1	December 1	Not yet paid	120	0
6	November 1	December 15	Not yet paid	200	0

The reinsurer has also provided a $100,000 letter of credit to secure the recoverables, and none of the reinsurance recoverables are in dispute.

a. (2.5 points)

Calculate the primary insurer's 2013 Schedule F provision for reinsurance.

b. (0.5 point)

Explain one way in which the primary insurer could modify the terms of the reinsurance agreement to reduce its provision for reinsurance.

c. (1 point)

Describe two differences between a statutory provision for reinsurance and an Appointed Actuary's discussion of reinsurance collectability in the Statement of Actuarial Opinion.

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16. (5 points)

An insurer exclusively wrote monoline homeowners insurance through 2009 and diversified into general liability beginning in 2010. The following excerpts have been provided from the insurer's 2013 Annual Statement.

Schedule P - Part 2 Summary				
Year in Which Losses Were Incurred	Incurred Net Losses and Defense and Cost Containment Expenses Reported at Year End ($000 omitted)			
	2010	2011	2012	2013
2010	75,000	87,500	92,000	92,500
2011	XX	81,000	94,000	101,000
2012	XX	XX	92,000	102,500
2013	XX	XX	XX	103,000

Earned Premium	101,000	109,000	112,000	148,000
Loss & DCC Reserves	58,000	81,000	103,000	125,000
Policyholders' Surplus	88,000	92,000	95,000	101,000

IRIS Ratio 11	11.2%	14.2%	19.0%
IRIS Ratio 12	14.5%	13.1%	18.5%
IRIS Ratio 13	10.6%	8.5%	7.6%

- Development in accident years 2009 and prior have no impact on the 2013 IRIS ratios.
- Assume there is no reinsurance payable on paid losses.

a. (0.75 point)

Calculate IRIS ratio 11 for 2013 and indicate whether the result is in the range of usual values.

b. (0.75 point)

Calculate IRIS ratio 12 for 2013 and indicate whether the result is in the range of usual values.

c. (1.5 points)

Calculate IRIS ratio 13 for 2013 and indicate whether the result is in the range of usual values.

<<QUESTION 16 CONTINUED ON NEXT PAGE>>

16. (continued)

d. (1 point)

Given the IRIS ratios from prior years, interpret the results for 2013.

e. (1 point)

Beyond RBC and IRIS, identify two tools used to categorize insurance companies at risk of financial impairment and briefly describe one potential limitation of each tool.

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17. (3.25 points)

Given the following information for an insurance company (figures other than discount factors and tax rates are in millions of dollars):

Statutory Underwriting Profit	-6
Face Value of Taxable Bonds @ 13% Coupon Rate	200
Face Value of Tax-Exempt Bonds @ 10% Coupon Rate	250
Dividends Received from Controlled Companies	8
Realized Capital Gains	2
Unrealized Capital Gains	10
Unearned Premium Reserve (Beginning of Year)	100
Unearned Premium Reserve (End of Year)	120
Loss and LAE Reserve (Beginning of Year)	500
Loss and LAE Reserve (End of Year)	550
Average Reserve Discount Factor (Beginning of Year)	0.92
Average Reserve Discount Factor (End of Year)	0.95
Regular Income Tax Rate	0.35
Alternative Minimum Income Tax Rate	0.20
Alternative Minimum Tax Credit (Beginning of Year)	0

Calculate the insurance company's income tax.

CONTINUED ON NEXT PAGE

18. (2 points)

a. (0.5 point)

Briefly describe two reasons for the codification of SAP.

b. (0.25 point)

In accordance with specific statutes or regulations promulgated by individual states, identify the source publication(s) for preparing and issuing statutory financial statements for insurance companies in the U.S.

c. (0.75 point)

Fully describe the process to find guidance when preparing statutory financial statements if the source identified in part b. above does not provide appropriate guidance.

d. (0.5 point)

Briefly describe two considerations for a preparer of statutory financial statements when making a judgment about whether an error contained in a financial statement is material.

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19. (2.5 points)

a. (1 point)

Describe the two main components of the Risk-Based Capital (RBC) system.

b. (0.5 point)

Briefly describe two aspects of the RBC system that make it a reliable tool for identifying companies at risk of insolvency.

c. (0.5 point)

The RBC ratio for an insurer is currently 310% of the Authorized Control Level. Explain whether this insurer may currently be placed into receivership by state insurance regulators.

d. (0.5 point)

Briefly describe two concerns that state regulators might raise if the RBC system were to be replaced by internal company models to determine minimum capital requirements.

CONTINUED ON NEXT PAGE

20. (3 points)

a. (1.5 points)

Briefly describe how the following are recognized under each of GAAP, SAP, and IFRS accounting standards:

- Premium revenues
- Commission and brokerage expenses

b. (1 point)

Briefly describe the potential immediate impact of adopting IFRS on publicly traded U.S. insurers for the following items:

- GAAP Income Statement
- SAP Income Statement
- Short-term profit
- Long-term profit

c. (0.5 point)

Briefly describe two concerns regulators may have if IFRS replaces SAP.

CONTINUED ON NEXT PAGE

21. (2.75 points)

Answer the following based on ASOP 41.

a. (0.75 point)

Briefly describe three disclosures that should be included in an Actuarial Report if the assumptions used in the Report were promulgated by a state insurance department.

b. (0.5 point)

Describe the course of action that the actuary should take if the Actuarial Report is in a prescribed form that does not accommodate the disclosures identified in part a. above.

c. (1.5 points)

Identify six disclosures, other than those described in parts a. and b. above, that an actuary should include in any Actuarial Communication.

CONTINUED ON NEXT PAGE

22. (2.5 points)

The following is an excerpt from a company's Actuarial Opinion Summary as of December 31, 2013:

	Net Loss & LAE Reserves ($000s)		
	Low	Point	High
A. Actuary's range of estimates	20,000		26,000
B. Actuary's point estimate		22,750	
C. Company carried reserves		23,000	
D. Difference between company carried and actuary's estimate	3,000	250	(3,000)

- 2013 net earned premium: $55 million
- Policyholders' surplus as of December 31, 2013: $31 million

a. (1 point)

Using the data provided above, calculate and justify two different materiality standards, using different metrics, to address the risk of material adverse deviation in the Statement of Actuarial Opinion.

b. (0.5 point)

Based solely on the materiality standards developed in part a. above, explain whether the Appointed Actuary would conclude that there are significant risks and uncertainties that could result in material adverse deviation.

c. (0.5 point)

Based on information other than that provided above, briefly describe two additional materiality standards that the Appointed Actuary might use to address the risk of material adverse deviation.

d. (0.5 point)

Identify two major risk factors that the Appointed Actuary may include in a Statement of Actuarial Opinion when addressing whether a company faces significant risks and uncertainties that could result in material adverse deviation.

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23. (2.5 points)

The following excerpt is from the 2013 Statement of Actuarial Opinion (SAO) for an insurance company:

> "*IRIS Ratios*
>
> I note no exceptional values in the NAIC IRIS tests for One-Year Reserve Development to Surplus or Two-Year Reserve Development to Surplus. However, the Estimated Current Reserve Deficiency to Surplus IRIS ratio produced an exceptional value of 27%, which is in excess of the 20% threshold.
>
> *Long-duration contracts*
>
> Excluding financial guaranty contracts, mortgage guaranty policies, and surety contracts, the Company's management has informed me that the Company does not write policies with coverage periods of 12 months or greater that are non-cancelable and not subject to premium increase."

a. (0.25 point)

Identify the section of the SAO that would contain the paragraphs above.

b. (0.75 point)

Identify the other three sections of the SAO.

c. (1.5 points)

Identify and correct three errors or omissions in the paragraphs above.

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24. (3 points)

Briefly describe the differences between the Statement of Actuarial Opinion and the Actuarial Opinion Summary by replicating and completing the following table. The replicated table does not need to include the "Item Description" column.

Item Number	Item Description	Statement of Actuarial Opinion (SAO)	Actuarial Opinion Summary (AOS)
#1	Filing deadline		
#2	Confidentiality		
#3	Parties with whom each is required to be filed		
#4	Relevant comments with respect to adverse development in loss and DCC reserves over a one-year period		
#5	Appointed Actuary's unpaid claim estimate		
#6	Assessment of whether there are significant risks and uncertainties that could result in material adverse deviation		

CONTINUED ON NEXT PAGE

25. (6.25 points)

Given the following information for an insurance company as of December 31, 2013:

- Risk charges under the NAIC's Risk-Based Capital (RBC) formula for 2013:

  R_0 = \$11,000,000
  R_1 = \$6,000,000
  R_2 = \$5,000,000
  R_3 = \$2,000,000, excluding the credit risk charge

- The company has neither tabular nor non-tabular discounts.
- The company has no accident and health or loss-sensitive business.
- The excessive growth charge is not applicable.
- Total adjusted capital: \$130,000,000
- Net Loss & LAE Unpaid: \$170,000,000
- Net Written Premium: \$200,000,000
- Existing Reinsurance Recoverables: \$30,000,000
- Applicable RBC information:

	Loss & LAE	Written Premium
Company RBC percent	20%	25%
Adjustment for investment income	95%	90%
Portion from company's largest line	100%	100%

- The company is considering purchasing additional reinsurance in 2014 to supplement the existing reinsurance program. It is considering three reinsurance contracts, each covering a named peril as displayed below:

	Option #1	Option #2	Option #3
	Hurricane	Earthquake	Tornado
Gross insured loss amount if event occurs	\$100,000,000	\$15,000,000	\$2,000,000
Reinsured portion of insured losses from event	60%	25%	100%
Probability of event occurring	15%	2%	1%
Reinsurance premium	\$20,000,000	\$1,000,000	\$1,200,000

- All contract options assume premium is paid on January 1, 2014 with expected payment of ceded losses on July 1, 2015. The reinsurer considers 3.0% to be a reasonable interest rate.
- The company did not experience any losses from hurricanes in 2013.

<<QUESTION 25 CONTINUED ON NEXT PAGE>>

25. (continued)

a. (0.75 point)

For each reinsurance option, briefly explain whether it passes the 10-10 rule for risk transfer.

b. (1.5 points)

Without using the 10-10 rule, justify the assertion that each contract qualifies for risk transfer.

c. (4 points)

In order to evaluate the potential benefit of the additional reinsurance being considered in 2014, the company has modeled the impact of the hurricane treaty as if there had been a hurricane in 2013.

The following assumptions were used by the company in its model:

- Insured losses from the hypothetical hurricane were $100,000,000 in 2013, with $0 paid as of December 31, 2013.
- Hurricane reinsurance premiums were funded by selling class 4 unaffiliated bonds from the company's existing investment portfolio.

Calculate the company's hypothetical 2013 RBC ratio assuming that the hurricane reinsurance contract qualifies for risk transfer.

CONTINUED ON NEXT PAGE

26. (3 points)

A primary insurer has commuted a policy with an authorized reinsurer. The primary insurer's losses are shown below, both before and after the commutation (all figures are in thousands of dollars).

	Before Commutation			After Commutation		
	Gross	Ceded	Net	Gross	Ceded	Net
Paid Loss	10,000	2,000	8,000	10,000	2,600	7,400
Case Loss	3,000	600	2,400	3,000	0	3,000
IBNR Loss	2,000	400	1,600	2,000	0	2,000

- The discount factor for tax purposes is 0.85.
- The income tax rate is 35%.

a. (0.5 point)

Briefly describe two reasons a primary insurance company would enter into a commutation.

b. (1.5 points)

Calculate the change in the primary insurer's statutory surplus as a result of the commutation described above. Include the effect of taxes.

c. (1 point)

Identify and briefly describe one distortion to the primary insurer's Schedule P and one distortion to the reinsurer's Schedule P that might result from the commutation.

END OF EXAMINATION

Exam 6-U.S.
Regulation and Financial Reporting (Nation Specific)

POINT VALUE OF QUESTIONS

QUESTION	VALUE OF QUESTON	SUB-PART OF QUESTION (a)	(b)	(c)	(d)	(e)	(f)
1	2.75	0.50	2.25				
2	2.00	1.00	1.00				
3	2.75	0.75	0.50	0.50	1.00		
4	3.00	1.00	1.00	1.00			
5	3.25	0.50	1.00	0.50	0.75	0.50	
6	3.00	1.00	1.00	1.00			
7	2.75	0.75	1.00	1.00			
8	3.25	0.75	0.25	0.25	0.50	0.50	1.00
9	2.00	0.50	0.50	0.50	0.50		
10	3.00	0.25	0.75	0.50	1.00	0.50	
11	3.00	0.50	1.00	0.50	1.00		
12	3.50	1.25	2.25				
13	4.25	3.75	0.50				
14	3.00	2.50	0.50				
15	4.00	2.50	0.50	1.00			
16	5.00	0.75	0.75	1.50	1.00	1.00	
17	3.25	3.25					
18	2.00	0.50	0.25	0.75	0.50		
19	2.50	1.00	0.50	0.50	0.50		
20	3.00	1.50	1.00	0.50			
21	2.75	0.75	0.50	1.50			
22	2.50	1.00	0.50	0.50	0.50		
23	2.50	0.25	0.75	1.50			
24	3.00	3.00					
25	6.25	0.75	1.50	4.00			
26	3.00	0.50	1.50	1.00			
TOTAL	81.25						

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SAMPLE ANSWERS AND EXAMINER'S REPORT

GENERAL COMMENTS:

- Candidates should note that the instructions to the exam explicitly say to show all work; graders expect to see enough support on the candidate's answer sheet to follow the calculations performed. While the graders made every attempt to follow calculations that were not well-documented, lack of documentation may result in the deduction of points where the calculations cannot be followed or are not sufficiently supported.
- Incorrect responses in one part of a question did not preclude candidates from receiving credit for correct work on subsequent parts of the question that depended upon that response.
- Candidates should try to be cognizant of the way an exam question is worded. They must look for key words such as "briefly" or "fully" within the problem. We refer candidates to the Future Fellows article from December 2009 entitled "The Importance of Adverbs" for additional information on this topic.
- Some candidates provided lengthy responses to a "briefly describe" question, which does not provide extra credit and only takes up additional time during the exam.
- On the other hand, some candidates provided "list-type" responses for "briefly describe", which do not demonstrate the candidate's knowledge.
- Generally, candidates were fairly well prepared for this exam. However, candidates should be cautious of relying solely on study manuals, as some candidates lost credit for failing to provide basic insights that were contained in the syllabus readings.

EXAM STATISTICS:

Number of Candidates	487
Available Points	81.25
Pass Score	54.75
Number of Passing Candidates	211
Effective % Passing	45.67

QUESTION 1

TOTAL POINT VALUE: 2.75 points | **LEARNING OBJECTIVE: A1**

SAMPLE ANSWERS (BY PART, AS APPLICABLE)

Part a: 0.5 point

The following provides examples of responses having the necessary components to demonstrate knowledge of the topic and obtain full credit; any two of the following received full credit:

- To protect policyholders.
- To ensure solvency of insurance companies.
- To ensure rates are not excessive, inadequate, or unfairly discriminatory.
- To make sure rates are affordable and insurance is available.
- To make sure rates are actuarially sound.
- To effect an equitable and efficient insurance market.

Part b: 2.25 points

The following provides examples of responses having the necessary components to demonstrate knowledge of the topic and obtain full credit; an explanation of the level of scrutiny and two supporting reasons for each coverage received full credit:

<u>Homeowners Insurance</u>

- High scrutiny.
- Regulatory overview of overall rate and detailed review on classification system

Reasons:

- Affects a significant portion of population.
- There is a great deal of political awareness around this coverage.
- Sophisticated rating and classification system.
- Insolvencies affect guaranty fund.
- Consumers are not sophisticated.
- Insurance is compulsory for most mortgages.
- Detailed stat plans with credible data.
- Legislators and regulators understand and are familiar with it.
- It's in the public interest.
- Homogenous insureds.

<u>Title Insurance</u>

Level of scrutiny given must match reasons given

- Low (with two low reasons)
- Medium (with one low and one high reason)
- Rate manuals filed (with two low reasons)

Low Reasons:

- Specialized Risk.
- Lack of credible data to base rates on.
- Driven more by business expenses than insurance costs.
- Managing rate is more about risk selection and underwriting efforts.

- Not a lot of loss data is available so it's difficult to come up with actuarially sound rates.
- Very low visibility to the general public so not as much of a political issue.
- Consumer often reviews with a financial institution who has knowledge of this insurance.
- Not very refined classification system or rating plan.
- Buyers of title insurance aren't eligible for guaranty funds.
- Minimal insurance risk covered by policy.
- Fairly standard risks.
- Coverage not compulsory.

High Reasons:

- Basically required by mortgage lender on every home sale.
- It affects the general public directly as it is part of the home-buying process.
- Buyers are slightly more sophisticated but may need information from regulators to facilitate decisions.

Commercial Cyber Liabilities

Level of scrutiny given must match reasons given

- Low (with two low reasons)
- Medium (with one low and one high reason)
- Rate manuals filed (with two low reasons)

Low Reasons:

- Doesn't impact a large portion of the population.
- Relatively new compared to other coverages so regulator has not had time to become heavily involved.
- Buyers have power to negotiate rates.
- Highly individualized risks.
- Most insureds are large sophisticated commercial companies.
- This is not a mandatory coverage.
- Not easy to understand coverage and price.
- This is a relatively new coverage without credible loss history to analyze.
- Requires expertise not yet found in most departments.

High Reasons:

- Risks are more common nowadays and impact normal people so greater public awareness.
- Potentially affects a ton of customers of the company purchasing the insurance.
- This is a relatively new area of liability so may require extra scrutiny to get started.

EXAMINER'S REPORT (BY PART, AS APPLICABLE)

The candidate was expected to know generally why rate regulation exists and how it affects different lines of business. Most candidates performed well on this question, especially part b.

Part a

Very few candidates provided incorrect answers. However, many of the answers were incomplete in that they only provided one thought when the point total of 0.5 and the request to "describe" indicated that at least two thoughts were needed. For example, simply answering "to ensure rates are not inadequate, excessive, or unfairly discriminatory" would be considered correct but incomplete.
Part b
Candidates were expected to be able to apply levels of and reasons for scrutiny given in the text to a new line of business. Candidates generally performed better on homeowners and commercial cyber liability than title insurance. Some common errors included providing a description of the level of regulatory scrutiny that did not match the reasons given for that level and providing two reasons that were essentially the same.

QUESTION 2	
TOTAL POINT VALUE: 2.0	**LEARNING OBJECTIVE: A1 / A3**

SAMPLE ANSWERS (BY PART, AS APPLICABLE)

Part a: 1 point

The following provides examples of thorough responses having the necessary components to demonstrate knowledge of the topic and obtain full credit:

- Insurers are motivated to have high ratings in order to attract policyholders, so will adjust operations/business strategies to ensure their rating is high

  Some banks require homeowners to be placed with insurers above a certain rating in order to get a mortgage so the rating agency has implicit power in deciding which insurers qualify

- Certain types of insurance (e.g. surety, structured settlements) may need to be purchased from highly rated insurers. This means if you don't get a certain financial rating you may be limited in what you can write.

  Lower rated insurers and reinsurers may be avoided by agents and reinsureds, so there is high pressure to perform well and do certain actions to maintain a high rating.

- Because financial ratings are important to insurers in terms of selling business via agents and brokers, the rating agencies can indirectly pressure insurers to take actions and be financially strong due to fear of downgrade in ratings. Agents and brokers might be hesitant to place business with an insurer that does not have a good rating

  In conducting off-site solvency monitoring of insurers, regulators may reference the financial strength ratings. Since regulatory scrutiny is undesirable to insurers they may be pressured to keep a good rating, thus giving rating agencies some power.

Part b: 1 point

The following provides examples of responses having the necessary components to demonstrate knowledge of the topic and obtain full credit:

- It is not required that the insurer receive a financial strength rating, so any sense of regulatory power the agencies have is not universal and absolute.

  Rating agencies cannot intervene and take corrective action against an insurer and so have no real regulatory power over the insurers.

- Insurance companies pay for ratings so there is some chance of moral hazard for rating agencies giving higher than actual deserved rating to obtain market share. This contradicts regulators goal in maintaining an insurer's solvency.

  There are multiple rating agencies and an insurer does not have to do business with one particular agency. With regulators, the company cannot choose.

- Rating agencies cannot require the company to make specific changes, which regulators can ultimately do.

  Ratings reflect more on financial position of the company rather than solvency. Rating agencies focus is more of an on-going concern.

EXAMINER'S REPORT (BY PART, AS APPLICABLE)

Candidates were expected to demonstrate an understanding of the differences and similarities between insurance company relations with rating agencies and regulators. Candidates should be able to demonstrate why rating agencies have implicit regulatory powers over insurance companies, and also identify why the rating agencies do not have any actual regulatory power over insurance companies.

Overall, most candidates did not receive full credit on both parts but were able to obtain at least partial credit on each part, with many candidates receiving more points on part a. In part b, many candidates seemed to find difficulty in stating two complete and unrelated thoughts. In order to receive full credit on each part, candidates were expected to make two complete statements, consisting of two thoughts each.

Common errors included:

- Restating the same idea for each statement.
- Asserting only one thought, or incomplete thoughts in each statement.
- Not identifying the explicit powers that a rating agency lacks but a regulator does not.

Part a

Most candidates performed well on this part of the question. The candidate was expected to identify the benefits of cooperating with rating agencies, and express the business reasons that would make cooperation with the rating agency virtually mandatory. Also acceptable was the ability to demonstrate the ways in which not cooperating with a rating agency can be similarly detrimental to not cooperating with regulators. In order to receive credit for this part, the candidate was expected to list two complete statements, each consisting of two thoughts demonstrating an understanding of the question.

Common errors on this part:

- Incomplete or singular thoughts in each statement. For example, "Agents may require a high rating."
- Repeating the same idea for each statement within this subpart.
- Stating that agencies perform on-site evaluations. This response does not indicate regulatory power over insurers.

Part b

This part of the question was more challenging for candidates. To obtain full credit, candidates were expected to identify the explicit powers rating agencies do not have over insurers that the regulators do possess and/or identify the differences between the goal of the rating agency

compared to that of the regulator. Similar to part a, candidates were expected to list two complete statements, each consisting of two thoughts demonstrating an understanding of the question.

Common errors on this part:

- Including only one thought in each statement provided.
- Providing responses that do not indicate why a rating agency would not have implicit authority over insurers. Common responses for this included:
    - Claiming that guaranty funds negate the need for financial ratings
    - Some candidates claimed that because rating agency methodologies may be unclear they do not have implicit authority.
    - Stating that the financial collapse led to less credibility for rating agencies.

QUESTION 3

TOTAL POINT VALUE: 2.75	**LEARNING OBJECTIVE: A1/A2/A4**

SAMPLE ANSWERS (BY PART, AS APPLICABLE)

Part a: 0.75 point

The following provide examples of thorough responses having the necessary components to demonstrate knowledge of the topic and obtain full credit; any three of the following were accepted:

- Congress intended the Sherman Act / Anti-trust law to prohibit conduct that restrained/monopolized interstate trade
- Insurance not distinct to a given state—the same insurer can write business with insureds in different states
- Only a small number of members of the SEUA were domiciled in one of the SEUA states
- Other intangible products were subject to the commerce clause
- Other businesses sell products in non-domiciliary states; these businesses are subject to the commerce clause
- Would have to make specific exception to the business of insurance for commerce clause not to apply

Part b: 0.5 point

The following provide examples of thorough responses having the necessary components to demonstrate knowledge of the topic and obtain full credit; any two of the following were accepted:

- Requires states to facilitate insurance producers' ability to operate in more than one state
- Prohibits states from preventing bank-related entities from selling insurance
- Prohibits national banks from forming subsidiaries to underwrite insurance
- Allows bank financial holding companies to create insurance affiliates
- Federal government established information sharing disclosure guidelines between banks and insurance companies

Part c: 0.5 point

The following provide examples of thorough responses having the necessary components to demonstrate knowledge of the topic and obtain full credit; any two of the following were accepted:

- Authorizes the federal government to negotiate (or pre-empt state laws which conflict with) international insurance agreements
- Legislates several changes in the non-admitted market (two specific examples below would be enough for full credit)
    - Requires that only home state of insured party may impose a premium tax
    - Compels states to adopt uniform rules and procedures
    - Requires that placement in non-admitted market be regulated only by the insureds' home state
    - Exempts brokers and large commercial purchasers from doing full due diligence on whether insurance could be placed with an admitted carrier

- Legislates several changes in the handling of reinsurance arrangements (two specific examples below would be enough for full credit)
    - Requires states to allow reinsurance credit for a ceding company if the ceding company's domiciliary state allows it and is accredited
    - Gives reinsurer's domiciliary state sole responsibility for regulating its financial solvency
    - Preempts extraterritorial application of credit for reinsurance laws by states other than the domiciliary state
    - Permits states to proceed with reinsurance collateral reforms if they are accredited
    - Establishes the Federal Insurance Office ("FIO" is also acceptable) which is authorized to require insurers to submit data/information (OR establishes insurance expertise at the federal level)
    - Insurers/Reinsurers that use derivatives could be subjected to central clearing/trading requirements

Part d: 1 point

The following provide examples of thorough responses having the necessary components to demonstrate knowledge of the topic and obtain full credit; for each type of regulation (federal and state) any one of the following items was accepted:

In favor of federal insurance regulation

- More efficient because less duplication of effort for the regulator and the insurer, compared to state regulation, where insurers must answer to regulators in multiple states
- More efficient because uniform regulation facilitates entry and exit, making it easier for insurers to do business in multiple states
- Facilitates dealings with international markets because it creates a single point of contact for foreign regulators/governments

In favor of state insurance regulation

- U.S. is geographically large and diverse so consumer protection / solvency regulation / rate regulation (only one necessary) best served by state regulators familiar with these state-specific features
- States have/experience state-specific perils so regulators in different states necessarily have different focuses / expertise
- States differ dramatically in population densities, urban vs. rural makeup, population age/income distribution, etc., (only one necessary) which thereby require different regulatory structures/rules
- Regulations behind some lines of business vary considerably from state to state, making state-specific expertise useful
- Duplication of effort inherent in state system results in more effective solvency regulation because individual regulators make mistakes
- Opportunities for peer review help to avoid regulatory forbearance/regulatory capture
- State regulation proved it is not broken in the banking crisis, where insurance solvency was

better handled than banking sector

EXAMINER'S REPORT (BY PART, AS APPLICABLE)

The question required the candidate to show a basic understanding of the SEUA decision, Gramm-Leach Bliley, and the Dodd Frank Act, as well as benefits and disadvantages of different regulatory structures. Most candidates performed well on this question. Where candidates lost credit, the most typical mistakes were as follows:

- Part a
  - Some candidates listed items such as boycott, coercion, etc. as arguments used by the Supreme Court, but did not connect them to the Supreme Court's decision – which was that the Sherman Anti-Trust (accepted various forms of this wording) was intended to apply to insurance
  - Some candidates referred to the Robinson-Patman act, which became applicable to insurance following this ruling, but was not directly cited as a reason for the ruling
- Part b
  - Some candidates confused GLB with Dodd Frank decision
  - There was some general confusion around the difference between underwriting and selling/producing
- Part c
  - Some candidates confused GLB with Dodd Frank decision
- Part d
  - Most candidates received full credit, but where credit was taken off, it generally was due to not describing in enough depth or not actually giving a reason Examples include:
    - State regulation is in public's interest (question asks for a discussion and therefore two thoughts, such as "why" state regulation is in the public's interest)
    - Federal regulation is easier (again looking for a discussion as to "who" federal regulation is easier for or "why", e.g., "for multi-state insurers", or "reduce cost", "because it enables uniform filing forms", etc.)

QUESTION 4	
TOTAL POINT VALUE: 3	**LEARNING OBJECTIVE: A2/A4**
SAMPLE ANSWERS (BY PART, AS APPLICABLE)	

Part a: 1 point

The following provide examples of thorough responses having the necessary components to demonstrate knowledge of the topic and obtain full credit; any one of the following was accepted:

- The McCarran-Ferguson Act allows individual states to regulate rates, so it would be their responsibility to make sure the reduction in rates do not make the rates inadequate. The Graham-Leach-Bliley Act says that the investment transactions made by the insurance company will be regulated by the federal government since it is not part of the business of insurance.
- Reduce rates to attract more business – Robinson-Patman applies. Must justify that reduced rates are the product of reduced operating costs (applied until states enacted their own antitrust laws after McCarran-Ferguson). Use swaps or other derivatives to generate additional investment income – The Securities and Exchange Act applies. Must convey information about derivatives investments in the company's annual statement so stakeholders are aware of the additional risk.
- Reduce Rates – Sherman-Antitrust Act applies. The insurer is not allowed to reduce rates to drive others out of the market. Sherman – Antitrust prohibits collusion to gain monopolistic power. Use swaps/derivatives – Dodd – Frank Act. The D-F Act had implications on insurers' use of derivatives and investment strategies in response to the recent financial crisis.

Part b: 1 point

The following provide examples of thorough responses having the necessary components to demonstrate knowledge of the topic and obtain full credit; any one of the following was accepted:

- By reducing rates the insurance company may become less profitable and gradually become insolvent, opening up that business to other insurers. Similarly, using swaps and other derivatives is more risky. If it does not work, it could lead to less profitability and eventually insolvency which would open up that business to other insurers.
- Reduce rates – they are already financially troubled, by reducing rates they will likely compound their financial troubles (continue to attract business @ inadequate rates) and they will likely go insolvent, reducing competition for other ins. Companies in the market. Use Swaps or other derivatives – unless the derivatives are being used to hedge other investments, again the company is adding risk when it should be reducing risk and increasing chances of insolvency and reduced competition for other insurers.
- Reduce Rates – other insurers may be a reduction in high-risk insured if the rate reduction results in adverse selection – high risks move to lower rates. Swaps/Derivatives – High yield may save troubles insurer, reducing cost of insolvency to other insurers.
- Reduce rates- competitors will benefit because high-risk insured will go to other company where rates are lower since the other company will face adverse selection. Derivatives – the additional volatility of this company's assets could lead to a lower rating from rating agencies so competitors will benefit from having a higher rating.

Part c: 1 point

The following provide examples of thorough responses having the necessary components to demonstrate knowledge of the topic and obtain full credit; any one of the following was accepted:

- If the reduced rates lead to insolvency, the consumer may not be fully reimbursed for their claims or their unearned premium. Similarly, if the risky investments lead to insolvency, consumers may not be fully reimbursed for claims or unearned premium.
- For each of the strategies – If the insurer eventually goes insolvent, the consumers will suffer because either they'll be paid for their losses on policies with insurer from guaranty funds (which have limitations on claims payments and additional deductibles to pay) or if a surplus lines carrier they won't be indemnified at all for losses under the policies with the insolvent insurer.
- Reduced rates may not be adequate, so the insurer may be at higher risk for insolvency, which would result I them not being able to meet obligations to consumers. Swaps/derivatives – negative return could also result in insolvency, making insurer unable to meet obligation.
- Rate inadequacy may lead to insolvency in which case consumers may not be fully indemnified. Swaps and derivatives are more volatile investments as opposed to bonds. The company may increase rates to compensate for increased volatility.
- Reduce Rates - If rates are reduced to an inadequate level, the insurer may become insolvent which ultimately harms consumers who have to fund the insolvency through guaranty fund assessments. Swaps & derivatives - these are very risky assets. Investors will demand high rates of return for these risks & this may increase rates significantly for consumers.

EXAMINER'S REPORT (BY PART, AS APPLICABLE)

Candidates were expected to understand how federal regulation applies to insurance and how certain actions by one insurer (such as cutting rates or using risk swaps/derivatives) can have an impact on the market (other insurers) and consumers. Candidates needed to be able to understand how insolvency can occur and how this is harmful. Candidates needed to pull knowledge from multiple articles on the syllabus and multiple responses were awarded full credit. Candidates needed to provide sound explanations to their conclusions.

Candidates seemed to have difficulty with the question. Parts a. and b. gave candidates the most difficulty. Many candidates had trouble recalling applicable federal legislation and appear to have misread the question.

Part b was the most challenging conceptually because candidates needed to understand how one insurer's actions can impact the market. Much of solvency regulation and insurance regulation in general is targeted at protecting consumers. This part of the question was asking for how other insurers benefit from questionable actions of another insurer that could lead to insolvency, and this seemed to catch candidates off guard.

Part a

This question was challenging for candidates. Candidates were expected to understand the major pieces of federal legislation that apply to the regulation of insurance. To receive full credit, candidates were expected to identify a federal act that would apply to reducing rates and an act that would apply to the use of swaps/derivatives. For each strategy, the candidates needed to explain how the act applied to those activities. Common themes and incorrect responses are as follows:

- Many candidates would answer that Robinson-Patman applied and stated that the rate

reductions needed to show evidence of reduced cost. Students who responded this way demonstrated a lack of understanding of McCarran-Ferguson, which superseded Robinson-Patman and placed the responsibility for rate regulation on the states. Credit was only given for this response when the student acknowledged that Robinson-Patman only applied if the states were not regulating rates.

- Many candidates instead of listing an act would list an agency (such as the SEC or FIO). Since this questions specifically asked for a piece of legislation these answers received no credit.
- Candidates often would describe how a federal legislation applied to insurance without listing the specific act. Because there was no specific legislation referenced these responses also received no credit.
- Several candidates' responses with NAIC based laws (RBC, Guaranty Fund, etc.). Students responding this way seem to not understand that the NAIC based laws are still state laws and were awarded no credit.
- This part of the question was left blank or unanswered more than any other part on the exam.

Part b

This question was also challenging for candidates. Candidates were expected to understand how the actions of the insurer who is either cutting rates or using swaps or derivatives would benefit other insurers in the market. In order to receive full credit, candidates needed to explain and give a logical connection between the one insurer's actions and the other insurers. Doing so would demonstrate an understanding of adverse selection, solvency risk, and how guaranty fund assessments work.

There were two common misinterpretations to the questions:

- Answering the questions from the perspective of how it helps the insurer taking the actions, not the other insurers in the market
- Answering how the laws listed in part a help the other insurers in the market by preventing the insurer in question from taking the actions listed in the question.

No points were awarded to candidates who answered the question this way. After re-reading the question, we believed that the question was not ambiguous.

Another common theme was candidates stating that by the one insurer moving its assets out of bonds and into swaps/derivatives it would lower bond prices and increase the yield on the other insurers bonds. No points were awarded for this response as candidates who responded this way showed a lack of knowledge of the size of the bond market. One insurance company moving some of its assets out of bonds is not going to have a material impact on the prices in the bond market. Candidates who gave this response and then acknowledged that the impact was essentially negligible received partial credit.

Part c

Candidates performed very well on this portion of the question. In many cases if there was any section the candidate answered it was this section. Candidates needed to understand insolvency and how this is a bad thing for the consumer. In order to receive full credit, candidates needed to state how insolvency could result from the actions given and then explain how that was harmful to the consumer.

Consumer appeared to be a somewhat ambiguous term for candidates, so credit was awarded for interpretations of the consumer as an investor as well as a policyholder. The most common reason for a candidate to not receive full credit was when the candidate would explain that the company would go insolvent, but then didn't discuss how that was harmful to the consumer. The second most common reason for a candidate to not receive full credit was when the candidate would simply state that the company would go insolvent without explaining how that would occur. Consideration was given if a candidate explained the connection between the actions and insolvency in part b.

QUESTION 5	
TOTAL POINT VALUE: 3.25	**LEARNING OBJECTIVE: A2**
SAMPLE ANSWERS (BY PART, AS APPLICABLE)	

Part a: 0.5 point

The following provide examples of thorough responses having the necessary components to demonstrate knowledge of the topic and obtain full credit; any one of the following was accepted:

- Often, rapid growth indicates the insurer may be relaxing its U/W standards or rates to grow the business. This decreases the margin of error to stay profitable. Furthermore, a high expense ratio leaves less money to pay for claims, increasing insolvency risk.
- The insurer most likely does not have as much insight into the new business being written. Also, due to economies of scale it seems counter-intuitive for expenses to increase -> may be writing more premium to cover costs.
- (i) insurers in poor financial health may try to grow premiums to pay past losses
  (ii) one would expect due to economies of scale u/w expense ratios to decrease with increase premiums. Something strange may be going on.
- Rapid growth is a leading cause of insolvency. Increasing expense ratio and growing book magnify potential profitability risk.
- Rapid growth is concerning because insurers don't know about the growing business risks right away/not as much insight as in "steady state." Also, reserving methods would need to be adjusted because data skewed towards end of year. Reserving actuaries may miss this. Also, increasing u/w expense ratio -> less profit -> chances for insolvency if no rate action.
- Rapid growth is often a precursor to insolvency, as company may cut rates to try to get premium in the books to get cash in the door to pay its obligations. Rate cutting exacerbates an already bad financial situation by making rates potentially inadequate. Increase in the u/w expense ratio will indicate that the company may also be paying higher commissions to agents to try to get business on the books, which puts further pressure on profitability.
- Rapid growth may be caused by inadequate rates. Combined with high u/w expense ratio, the insurer may have profitability issues.
- Rapid premium growth is a leading indicator of insurer insolvencies. Additionally, the increasing expense ratio may indicate the company is no longer profitable, which could result in declining surplus

Part b: 1.0 point

- -Change in NWP / Prior NWP - This shows the amount the net premiums increased from prior values. This is relevant because if the premium rapidly increases this may fall above the trigger of 33%.
  -2yr Operating Profit - If the company is profitable, an increase in WP is less of an issue as long as they are reserved properly.
- -IRIS ratio 3 – change in net written premium over prior year NWP. This is relevant because there has been a lot of written premium growth.
  -IRIS ratio 5 – 2 year operating ratio. (2 yr loss and LAE and pol dividends / 2 yr earned premium + 2 yr expense ratio – other income / 2 yr written premium – 2 yr investment income / written premium.) - This is relevant because of the increase in expenses may

produce an unhealthy ratio > 100%

- -IRIS ratio 5- 2yr overall operating ratio -> should be investigated to see if the company is profitable (given its increasing expense ratio). This usual range is <100%
  -IRIS Ratio 13 - Estimated Current Reserve Deficiency / PHS -> the usual range is <25%. Should be investigated to determine reserve adequacy. Poor reserve adequacy in a time of rapid growth is a red flag that the company may be trying to increase written premium in order to pay current claims.
- -2 year operating ratio -> see if it's less than 100% -> see if insurer is still profitable despite rapid growth + higher u/w expense ratio
  -1 year reserve development -> see if greater than 20%. If yes, then concerns that reserve might be inadequate w/ growing book.
- -IRIS Ratio 1 (GWP to PHS) - An increase in this ratio could indicate that the insurer is bearing more risk relative to its policy holder surplus
  -IRIS Ratio 5 (Two Year Operating Ratio) - An increase in this ratio could signal profitability problems, and profitability is a principle determinant of the insurer's financial stability and solvency.
- -Look at the Net Written Premium to surplus (ratio 2) in order to see if the insurer is maintaining adequate reinsurance. Growth may not be as much of a concern if it is accompanied by good reinsurance.
  -Look at the adjusted liabilities to liquid asset ratio to determine the liquidity of the insurer. A change in this ratio could be a sign of problems meeting demands for cash.
- -NWP to PHS - An increase in this ratio could indicate that the insurer is bearing more risk relative to its policy holder surplus
  -Two Year Operation Ratio - An increase to over 100 % might indicate the rapid growth is due to higher commissions paid to attract new business.
- Ratio 11 – 1 yr reserve development – helps determine reserve adequacy. A high ratio suggests under-reserving, which is a more severe problem associated with premium growth.
  Ratio 2 – NWP:PHS – shows how much risk the company is keeping and how dependent they are on reinsurance. Rapid premium growth may not be an issue if there are adequate reinsurance contracts in place.
- Ratio 13 – Estimated reserve deficiency to PHS since we want to see if reserves are adequate. If growing rapidly to see if cash demands and reserves are inadequate it would mean the situation is even worse. High insolvency risk since this is a short term solution.
  Ratio 9 – Adjusted Liab/Liquid Assets – want to see if assets are liquid enough to meet demands and see potential outlook for policyholders if liquidated. Since rapid growth may mean premiums deficient so assets would be used to meet obligations
- IRIS 2 – New Written Premium to Policyholder Surplus. If the insurer has substantial PHS, it may be acceptable to be growing
  IRIS 12 – 2-yr reserve development. The insurer has been growing for several years, so we'll want to be sure they understand the business and are accurately reserving for it.

Part c: 0.5 point

- Non-domiciliary regulators can still examine the company's financials, and will still examine them if the insurer operates in their state. The regulators can urge the domiciliary regulator to act. This is the peer pressure function of the regulatory system which

counters forbearance.

- Other regulators can order examinations on their own (single-state effort, multi-state effort that doesn't involve the NAIC. Outside regulator could also pressure domestic regulator to take action.
- -Can review public financial statements to calculate IRIS ratios and RBC ratios, as well as review income statement and balance sheet to help determine if the insurer is troubled.
  -Check rating from financial rating agency. Has it changed during the last several years?
- -The outside regulator may conduct its own review; the insurer is subject to regulation by any state in which it operates, regardless of whether the insurer is a foreign, domestic, or alien operator.
  -If the company is a nationally significant insurer, then the outside regulator could rely on findings from the review by the NAIC's Financial Analysis Division.
- -Pressure the domiciliary regulator to examine the company
  -Examine the company themselves
- -Non-domiciliary states are required to license insurers in their state and may assess an insurer's financial position when it applies for a license
- -They could do their own financial exam to evaluate solvency.
  -They could use NAIC's monitoring and assessment tools and possibly ask the NAIC for help (e.g. refer the insurer to FAWG if it has not already been caught through the FAD's periodic analysis as being of concern.)

Part d: 0.75 point

- The NAIC accreditation program looks at the laws and regulations of the state, regulatory methods and department/personnel procedures to make sure they are meeting minimum standards and are efficient.
- NAIC accreditation program serves to provide more uniform regulation among the states to help facilitate and improve state regulation. It does this by requiring states' laws and regulations meet the basic standards of NAIC model laws. It looks to make sure the state practices and procedures are acceptable and that state has the authority to impose sanctions and take regulatory action. It also makes sure that the organizational structure and personnel of DOI are adequate.
- Accreditation program sets minimum standards for DOI solvency regulation such that other states can rely on that DOI's regulatory practice related to multistate risks. It ensures states have statutes/regs that meet minimum standards related to NAIC model laws pertaining to Insurer solvency requirements and DOI monitoring. Also ensures DOIs practices are adequate and methods are acceptable. NAIC evaluates DOIs on site every 5 years with offsite reviews every year by looking at samples of DOIs financial solvency and monitoring exam work on multi-state risks.
- The NAIC accredits state DOIs to ensure that states' regulatory systems are somewhat uniform and qualified to regulate the insurance industry. The NAIC looks at state laws and regulations, past financial exams from the ODI, and DOI practices.
- Purpose: to create minimum standard for solvency regulation. Once accredited, provides evidence that state has regulatory system that can be relied upon by other states. To be qualified need minimum regulatory law. Currently all states are accredited.
- A program that grants accreditation to state regulatory bodies if they meet certain criteria of the NAIC. A review by the NAIC is performed, which consists of a legislative review,

personnel interviews, and regulatory practices.

- A company makes a request to the NAIC to become accredited. The NAIC performs an on-site exam every five years, and an annual off-site exam. The team either accredits the state or provides a management comment letter that contains suggestions for improving the system of financial regulation.
- NAIC looks at several aspects of regulator: personnel, org structure, laws, licensing procedures, financial analysis procedures. Reviews on-site every five years. Makes sure up to their standards.

Part e: 0.5 point

- NAIC accreditation process facilitates information sharing among states. It provides a forum for communication. This can be used by non-domiciliary states to pressure the domiciliary states regulators to take action.
- NAIC accreditation promotes uniform reporting and accounting standards, which makes it easier for different state regulators to review one insurer's financial condition.
- State of domicile may not be accredited but if it is, may be at risk of losing accreditation for not investigating rapid growth insurer if certain indicators exhibit a troublesome financial situation.
- If the state of domicile is not accredited, then the other states will not have as much confidence in its ability to be effective in regulating solvency.
- If the domiciliary state is accredited, the state should have a process for identifying troubled insurers. If the domiciliary state is NOT accredited, it's probably more likely that the non-domiciliary state would want to interfere via the options described in part c.
- The accreditation process is not relevant here. The purpose of accreditation is to evaluate DOIs, not address specific company situations.
- The accreditation process provides an avenue for non-domiciliary states to pressure the domiciliary regulator into performing an examination of the company
- Due to the accreditation process, states have similar regulation standards. If the non-domiciliary regulators find any problems about this company, they can share this information with the domiciliary regulator and pressure them to take action.
- If the domiciliary state doesn't want to lose accreditation, then they should perform a review.
- The regulator may not have examined the insurer because it lacks the resources to do so. Sufficient resources is a requirement of NAIC accreditation, and this may result in the DOI losing its accreditation.
- If the state is NAIC accredited, non-domiciliary states may have more confidence in the dom. State's regulatory process. It may feel that exam wasn't conducted as it wasn't deemed necessary, which means insurer is in good shape.
- Non-domiciliary states can be assured that the domiciliary state is using similar criteria to assess the company's financial health that they would use.
- Since the states must satisfy the same accreditation requirements, the other state regulators can usually trust the state's processes. However, a system of peer review is in place, so regulators from other states could pressure the domiciliary state to act.

EXAMINER'S REPORT (BY PART, AS APPLICABLE)

This question asks about programs, tools, and other options available to state insurance regulators. The Insurance Regulatory Information System (IRIS) and the Accreditation Program are specifically

mentioned, though the question also asks the candidate to identify other options available to regulators as well. Candidates are expected to be able to identify and describe a variety of options available to state regulators, although the level of detail which a candidate is expected to know varies by program.

The IRIS ratios are discussed by name several times on the syllabus and covered in detail in multiple syllabus readings, one of which is solely focused on IRIS ratios. Therefore, candidates are expected to have substantial knowledge of the IRIS system, including names, descriptions, and purposes of a number of IRIS ratios.

Candidates are expected to be familiar at a higher level with other programs and tools available to state regulators. Candidates should be able to identify some of these other options, and should be able to demonstrate an understanding of the goals and general process of these programs, including the Accreditation Program.

Finally, candidates are expected to be able to apply knowledge of each of these programs to real-world examples.

Some parts of this problem require basic knowledge of financial warning signs, solvency regulation, and/or NAIC programs. Part e is more challenging, as it requires the application of syllabus material to a real-world situation.

Candidates performed quite well on this question, though most candidates did not receive full credit. Many candidates skipped one or more parts of this five-part problem, especially part e. Further, many candidates provided only partial answers for parts a or d. Additionally, this problem asked for a large number of details, and many candidates answered the question well but made one more small mistakes on an individual part. This was especially true on part b.

For more detail, please see the commentary by part below.

Part a

The candidate was expected to identify why written premium growth and underwriting expense growth may be a concern; the candidate could also answer that rapid growth is a leading indicator of insolvency and why. To receive full credit, candidates were expected to provide two distinct ideas.

Only a basic understanding of solvency concerns was necessary to be successful on this part, so most candidates did well on this portion of the question.

Common errors include:

- Not providing two reasons why there might be concern
- Providing basic regulator concerns with solvency that are too general and not related the company in the question

Part b

Candidates were expected to define two different ratios and explain why each ratio is relevant to the situation stated in the question. Given the wording of the question, any IRIS ratio was an acceptable answer as long as the candidate provided its relevance to the situation or tied the ratio to the response in Part a.

Given that IRIS ratios are heavily emphasized in the syllabus, candidates generally did well on this part.

Common errors include:

- Not fully explaining why the ratio is relevant to the specific situation given in the question
- Providing only the number of the IRIS ratio without any further definition
- Not correctly defining the ratio

Part c

Candidates had a wide variety of syllabus material from which to pull answers to part c, so candidates were expected to be able to provide two distinct options for the non-domiciliary state to pursue.

Candidates generally scored well on this section of the question, with the most common score being full credit.

Common errors include:

- Providing two examples of reviewing financial information
- Citing functions of the NAIC that do not apply to the review of insurers

Part d

This question asks about the NAIC's Accreditation Program, which is discussed in several different syllabus readings. Candidates are expected to be able to demonstrate basic knowledge about this program, demonstrating knowledge of one or more of the following: the goals of the Program, what elements are included in the review process, who are the key participants in the Program, and/or implications of states being accredited. As seen in the list of answers above, not all of these items needed to be discussed, but candidates needed to touch on enough individual aspects of the program to receive full credit.

This question could be answered successfully with basic knowledge of the Accreditation Program. Generally candidates performed well on this part, with the most common score being full credit.

Common errors include:

- Not providing sufficiently detailed responses (e.g. "Program ensures that DOI meets standards" is not specific enough.)
- Stating that the Accreditation Program is for insurers, rather than Departments of Insurance.

Part e

This question asks the candidate to link the Accreditation process to the "situation" in part c of the problem. Candidates are expected to be able to demonstrate basic knowledge about this process, and apply this knowledge to real-world or theoretical situations.

The "situation" noted in this subpart could refer to any of: (a) a domiciliary state that has not performed an examination of a potentially troubled company, (b) a non-domiciliary state that has identified a problematic company in another state, or (c) the interaction between two different state regulators of a multi-state company.

This subpart is the most difficult part of Question 5, requiring candidates to synthesize information from the syllabus readings and apply it to a real-world situation. However, the open-ended nature of the question meant that a wide variety of answers were determined to be acceptable. As a result, candidates performed well on this problem, and the most common score was full credit. Some candidates, however, performed well on other parts but did not attempt this part.

Common errors include:

- Failure to link the answer to the situation in part c (e.g. listing an unrelated aspect of the Accreditation process without making its relevance to the question clear.)
- Stating that the accreditation is not relevant to the situation without providing an explanation why.
- Writing an answer that implied that the Accreditation Program is for insurers, rather than Departments of Insurance.
- Implying that the accreditation status of one state's DOI impacts what actions are required of, or available to, another state's DOI.

QUESTION 6

TOTAL POINT VALUE: 3 | **LEARNING OBJECTIVE: A2, A3**

SAMPLE ANSWERS (BY PART, AS APPLICABLE)

Part a: 1 point

The following provide examples of thorough responses having the necessary components to demonstrate knowledge of the topic and obtain full credit; any one of the following was accepted for each of the rating agency assessment and the application of IRIS ratio 1 and IRIS ratio 11:

Rating agency assessment

- The rating agency will start by comparing to the company's position in the industry. The rating agency will question why the company only recognized 10% of the exposure compared to the other companies in the industry. The results of those ratios will help the rating agency determine whether the company should get a better rating compared to those in the industry.
- The rating agency would investigate this company thoroughly as it appears they may be potentially hiding exposure since they are only reporting 10% of the exposure, whereas other similar companies are reporting more. The lack of integrity and hiding data may come out in the interactive rating session and the company may be put on watch or have their financial rating downgraded.
- The rating agency may review the policy forms to see if there was exclusion for this type of loss which would justify the low exposure. Also interview management and see if they were familiar with the exposure. If they avoided the losses, could result in the same rating or even an upgrade. [Note while upgrade wasn't the intended answer, it was accepted if the logic was reasonable and how the rating agency made the assessment was provided.]

Application of IRIS ratios

- IRIS Ratio 1: GWP to PHS: to assess the adequacy of surplus and if there is any unusual trend of premium growth (if surplus is adequate to support the premium)
- IRIS Ratio 1 (GWP/PHS) should be reviewed. Should be lower GWP/PHS given the long tailed nature of this line of business.
- IRIS Ratio 1 (GWP/Surplus) to check if insurer is increasing its writings to pay for future losses
- IRIS Ratio 11 (One Year Adverse Reserve Development / Prior PHS) to make sure adverse development from the toxic fumes does not negatively impact surplus by a lot.
- IRIS Ratio 11: 1 Year Loss Development to PHS: If there is adverse development, company may have understated reserves in order to increase surplus. The mass tort claims could cause insolvency
- IRIS Ratio 11 (One Year Reserve development to Prior PHS) can be helpful to see whether this exposure has been appropriately reserved for. May not be if continually seeing development.

Part b: 1 point

The following provide examples of thorough responses having the necessary components to demonstrate knowledge of the topic and obtain full credit; any two of the following were accepted:

- The credit risk charge in the RBC formula will be increased with the reinsurer's downgrade
- They may have to increase the provision for reinsurance
- The reinsurer may lose creditors/investors and could go insolvent. As a result, the cedant

may not be reimbursed for losses.

- This increases the credit risk for the reinsured
- The reinsured may need to explain the reason for having low quality reinsurance in the notes to the financial statements
- Reinsureds may need to increase their reinsurance provision on Schedule F
- When the appointed actuary examines reinsurance collectability, it may result in a 'deficient' opinion.
- Reinsured may have to increase reserve, decreasing surplus, which will cause rates to increase
- Primary insurer may need to buy more reinsurance elsewhere, which could increase cost
- Policy holders of the cedant may want to do business elsewhere because the reinsurer is not strong or financial insolvent
- The reinsured may need to get more collateral in order to receive the same credit for reinsurance
- Reinsureds may have to post additional letters of credit which is costly to the reinsured and maybe difficult to obtain after the other reinsurer was downgraded

Part c: 1 point

The following provide examples of thorough responses having the necessary components to demonstrate knowledge of the topic and obtain full credit; any two of the following were accepted for each of the disadvantages to claimants and advantages to insurers:

Disadvantage for claimants:

- Seriously injured claimants may not be a fair settlement because it is based upon a class action suit
- Class-action suits and settlements have higher overhead and attorney expenses, so claimants may only get some percentage of the total award. A large portion goes towards expenses
- The long latency of the illness may result in those getting sick later and being unable to receive payment if the funds are exhausted
- Those who may not discover their injury until later may not receive any payments
- A one-time payment may not adequately reimburse injured parties with ongoing medical treatments
- A lump sum payment will decrease in value due to no adjustments for COLA or medical inflation
- Claimants will have to give up their right to sue even if they thought they deserved a larger settlement
- There maybe illegitimate claimants who receive settlement but are not terminally ill, which lowers the average amount paid
- Payment may not differentiate between degrees of injury
- No punitive damages will be awarded
- Some injured parties may not have the financial knowledge to handle a large lump sum payment
- If all the payments occur at one time, it has the potential to cause insolvency for weakly capitalized insurers, which may hinder recovery

Advantage for insurers:

- Predictability of financial results going forward

- May not get bad publicity going forward since they settled under a national settlement, assuming this sort of case would yield negative national headlines
- Reduces the costs associated with claim defense (DCE/LAE)
- The matter is closed and financial uncertainty with respect to losses is eliminated
- The risk for adverse development on these losses is eliminated
- Eliminates need to worry about future legislation with regards to this exposure
- Can disclose on SAO that will be little to no concern of future adverse development of this mass tort. Yields more credibility to actuarial opinion.
- Some injuries unknown at the time and will not get paid, which reduces the damages
- All the insurance companies are involved, so no single insurer's reputation is damaged more than the others. They are all in the same boat.
- No more expenses to monitor these claims
- Cannot be hurt by unexpected inflation or higher cost of care
- No need to keep large reserves
- Insurer has potential to close out claim for less than actual value
- Avoid reopened claims
- Reduce expenses in the long run because there is an administrative cost associated with processing claims
- Certainty and closures is important to management and investor's decision-making
- Insurer's will save money because they avoid punitive damages
- Claims can be closed and transferred to a reinsurer
- May mitigate future related lawsuits
- Has the potential to reduce coverage disputes with reinsurers
- Certainty of timing – so resources and investments may be planned better
- If it's a national settlement, more funds may be available to help cover the payments
- Deterministic payments are better to match cash flows
- Insurer's will have a clear idea how contracts are interpreted going forward and can adjust future contracts to their benefit
- New insureds will see settlement as a good sign of great claim support and continue to purchase insurance. Helps insurance companies move past the stigma

EXAMINER'S REPORT (BY PART, AS APPLICABLE)

Candidates were expected to:

- Describe the process used by rating agencies to monitor solvency and financial health
- Understand and apply IRIS ratios 1 and 11 to a given scenario
- Understand the impact of rating downgrades in the marketplace
- Describe impacts to claimants and insurers of a prescribed settlement on a mass tort exposure

Part a of this question was challenging for candidates, particularly the rating agency assessment. Many did not fully answer the question or provide reasonable responses. Candidates generally performed well on part b, assuming they gave an answer from the perspective of the reinsurer. Candidates generally performed well on part c.

Part a

Candidates were expected to describe the process used by rating agencies to monitor solvency, reserving practices, including methods used for estimating mass tort exposure, and other

formulaic and qualitative assessments (interactive rating, management discussions, etc.) of the company relative to its peers. Candidates were also expected to identify what IRIS ratios 1 and 11 are, and how a rating agency may use these in evaluating the health of the company in the question.

Candidates generally were able to correctly identify IRIS ratios 1 and 11 and provide a reasonable explanation of their application. However, candidates generally did not do as well providing information on how a rating agency might assess this company. Some were not able to make the connection from what the rating agency might look at in this particular scenario, and the impact of that assessment.

Common mistakes included:

- Not providing how a rating agency might assess this company for financial rating purposes (e.g., interactive rating, compare ratios with competitors, etc.) or what the rating agency assessment (downgrade) was
- Simply restating the information provided in the question. For example, saying "lack of recognition would cause concern" did not receive credit
- Only listing out what IRIS 1 and 11 ratios are with no explanation on how it ties to the financial health of the company
- Incorrectly identifying IRIS 1 and 11
- Discussing impact of reinsurance (IRIS 1 shows ratio on a gross basis without consideration of reinsurance)

Part b

Candidates were expected to understand the relationship between a reinsurer and a reinsured, as well as the impact of a rating downgrade on the reinsured's financial health.

Most candidates provided reasonable responses such as credit risk, provision for reinsurance, disruption in the marketplace, increased costs for reinsurance, etc.

A common error was listing negative business consequences for the reinsurer rather than the reinsured.

Part c

Candidates were expected to describe the impacts to claimants and insurers of a prescribed settlement on a mass tort exposure.

Many reasonable answers were accepted. Common errors included factually incorrect responses ("liability is now off the books"), vague responses, or misreading the question such as listing advantages for claimants or disadvantages for insurers.

QUESTION 7

TOTAL POINT VALUE: 2.75	**LEARNING OBJECTIVE: B2, B3**

SAMPLE ANSWERS (BY PART, AS APPLICABLE)

Part a: 0.75 point

The following provides two examples of thorough responses having the necessary components to demonstrate knowledge of the topic and obtain full credit:

Sample answer 1

- Crop -> Private insurers write and service policies, and the federal government reinsures
- Unemployment -> Do not provide coverage
- Terrorism -> Private insurers write and service policies, and federal government reinsures

Sample answer 2

- Crop Insurance: Private insurer in partnership with government. Private insurer market and service the policy. Private and government share the profit & loss
- Unemployment: No involvement of private
- Terrorism: Private partnership with government. Private market and service the policy. Government as a reinsurer. It pays for the loss if exceeds a certain amount. (20% deductible. After 20% deductible, pay 85% of the loss)

Part b: 1 point

The following provides two examples of thorough responses having the necessary components to demonstrate knowledge of the topic and obtain full credit:

Sample answer 1

- Crop – Insurance encourages overproduction – could only provide insurance up to a certain amount of land/product
- Unemployment – studies show it lengthens time of unemployment -> reducing benefits would increase incentive to get a new job more quickly

Sample answer 2

- Crop Insurance: The sharing of loss between government and private has not been equal. Historically, private has gain, but government experienced loss. The loss of government will eventually be burden in taxpayer. The proposed change in balance the sharing between private sector and government
- Unemployment Insurance: Unemployment insurance has shown to elongate unemployment period. This is a social cost for general population. A proposed change is to encourage job-hunting during unemployment

Part c: 1 point

The following provides examples of thorough responses having the necessary components to demonstrate knowledge of the topic and obtain full credit:

Sample answer 1

- Support – the insurance industry can't insure a catastrophic, non-fortuitous event like terrorism. And the collateral social benefit of avoiding economic disruption in the event of a terrorist event is too large to cover.
- Against – Participation is fairly low and the private industry may be able to cover through risk exchanges and cat bonds.

Sample answer 2

- Supports: It serves a social purpose to prevent economic disruptions following a terrorist attack and private insurance sector is unwilling to offer terrorism insurance.
- Refutes: We haven't had a terrorist attack since 9/11, and pre-9/11, private insurers were able to provide coverage. They should be recovered enough by now to do the same. TRIA was meant to be temporary and eventually handed back to the private insurance sector.

Sample answer 3

- For: The private market will not support terrorism coverage due to the fact that losses are not fortuitous, that it does not affect enough people to produce stable rates, and that losses can be catastrophic. Gov't fills the void in coverage, and provides a social good.
- Against: the industry is well capitalized enough so that the TRIP program is unnecessary and an additional cost that is not needed; it also may encourage insurers to be lax in their U/W standards & aggregation monitoring if they know backstop is there.

Sample answer 4

- Necessary: Terrorism is an uninsurable event—it is not random or accidental and there is not enough experience to accurately price. Therefore, it is not available or affordable in the private market.
- Not necessary: Hasn't had a major terrorist event in the past 10 years, partly due to more stringent conduct of other industries (aviation, defense). Should be okay to remove program.

EXAMINER'S REPORT (BY PART, AS APPLICABLE)

Part a

Candidates generally performed well on this part. Candidates were expected to know the relationship between private insurers and government, e.g., whether a partnership exists between private insurer and government and how it works at a high level.

When there's a partnership between private insurers and government, e.g.: crop insurance and terrorism insurance, full credit would be awarded for stating the partnership with the program name; or describing how the private insurers and government function in the relationship. Simply stating no involvement in unemployment insurance would receive full credit for this subpart.

A common error observed for crop insurance was stating that it is exclusively provided by the government, and a common error for terrorism coverage was stating that it is not provided by the private insurers. Most candidates stated the correct answer for unemployment; there were no common errors.

Part b

Candidates were expected to identify a unique social cost for crop insurance and unemployment insurance program, and a reasonable mitigation solution.

This question was challenging for many candidates. The question specifically asked for a unique social cost. However some candidates provided a generic social cost that is common to many government programs, such as subsidy from the government. Further, many provided a flaw of the program instead of a social cost brought by the program, such as awareness of the program is low. Also, a good amount of candidates described the funding mechanism of the program. None of these answers were awarded credit.

For those candidates that were able to identify a unique social cost, they were also able to propose a change to each program that could mitigate the social cost.

Despite not asked in the question, many candidates answered how the programs work and how it benefits the insureds. No credit was given for this response.

Part c

Candidates were expected to construct an argument for both sides, and elaborate on the argument.

Majority of candidates received at least partial credit on part c, but fewer were able to draft out the argument and elaborate to receive full credit. Most of the responses from candidates were considered correct or reasonable, though a simple correct statement without supporting facts or elaboration would not earn full credit for this part.

QUESTION 8

TOTAL POINT VALUE: 3.25	**LEARNING OBJECTIVE: B2, B3**

SAMPLE ANSWERS (BY PART, AS APPLICABLE)

Part a: 0.75 point

The following provide examples of thorough responses having the necessary components to demonstrate knowledge of the topic and obtain full credit; any three of the following were accepted:

- "Provides improved service" or "Better claims practice; insure may treat assigned risk differently in ARP"
- "Charges more socially equitable rates" or "To allow insurers charging their own fair rates."
- "Removes the stigma of knowing you're in a residual market."
- "Policy holder doesn't have to get rejected to participate, so it's less trouble for consumers."
- "Convenience for policy holders, they do not need to apply to ARP"
- "Insurers have more control over rates than in traditional residual markets."
- "Stabilizes UW results as pool share experience compared to Assigned Risks"
- "Actuarial fair rates can be charged to high risk drivers rather than the prescribed rates" or "Insurers have more control over rates than in traditional residual markets."
- "More efficient – consumers only apply to reg. market, ins company handle claims, billing, etc."
- "Losses and operating expenses are apportioned among the insurers on a formula basis."

Part b: 0.25 point

The following provide examples of thorough responses having the necessary components to demonstrate knowledge of the topic and obtain full credit; any one of the following was accepted:

- "Both share profit and loss among all insurers in market."
- " JUAs & Reinsurance Facilities both spread the risks based on the insurer's market share."
- "Both JUAS and RF receive risks after they applied to private insurers who do not wish to retain risk."
- "In both the insured may not be aware of placement."
- "Both have voluntary insurer that writes business then cedes/forwards business to residual market."
- "Both provide insurance for those unwanted in voluntary market"
- "Insurer has the choice to write the policy or submit policy to the residual market"

Part c: 0.25 point

The following provide examples of thorough responses having the necessary components to demonstrate knowledge of the topic and obtain full credit; any one of the following was accepted:

- "Both have uniform rates for all insureds."
- "Constant rate charged to insured regardless of servicing carrier"
- "Both allow coverage to be obtained for otherwise uninsurable risks"

- "Both assign high risk insured to specific insurers."
- "Both do not use Private Insurer's premium rates."
- "the insurer/JUA to which the risk is assigned is responsible for issuing policies, collecting premiums, handling claims and providing other service to the assigned risk"

Part d: 0.5 point

The following provide examples of thorough responses having the necessary components to demonstrate knowledge of the topic and obtain full credit; any one of the following was accepted:

- "Assigned Risk Plan is the least preferred because the high risk policyholder has the stigma of being allocated to residual market,"
- "Assigned Risk plan might be least preferred since insureds must first be actively denied in the voluntary market before applying to the assigned risk plan."
- "JUA would be least preferred for a high risk policyholder because rates are set based on the performance of the pool, so this will likely result in the highest of rates."
- "Assigned Risk Plan because they will first be rejected by an insurer and then will have to apply to the plan, so there is a stigma of knowing that they are in the residual market.

Part e: 0.5 point

The following provide examples of thorough responses having the necessary components to demonstrate knowledge of the topic and obtain full credit; any one of the following was accepted:

- "State A would likely have a smaller residual market than State B."
- "State B is higher. Insurers will reject certain classes on voluntary market"

Part f: 1 point

The following provide examples of thorough responses having the necessary components to demonstrate knowledge of the topic and obtain full credit; any two of the following were accepted:

Exit market strategy:

- "Insurers may opt to not write business for that line and leave the state entirely which reduces competition and increases the size of residual market."
- "Exit market → likely increase residual market size due to some customers not being able to find a new insurer."

Underwriting Strategy:

- "Tighten underwriting standards: increase residual market due to reduced availability."
- Write fewer policies that have unprofitable characteristics- more insureds move to residual market & increase the residual market size.
- "Insurer may implement stricter underwriting standards to only target low risk insureds, which would increase size of residual market."
- "Insurers may increase u/w standards to focus on the better risks and not write the high-risk policies (b/c they can't rate properly) which shrinks the voluntary market and increases the residual market."
- "Implement Underwriting Guidelines to avoid writing High-Risk insureds →↑Residual market due to private unwillingness to insure."

Marketing Strategy:

- "Use restricted variable in its marketing strategy – Target only low –risk groups – High risks are not informed of the coverage available to them, and thus unable to find

insurance, increasing residual market size."
- "May change marketing strategy to market only to low risk drivers. This will also increase the size of the residual market."
- "Reduce expenses: Impact: decrease the size as the insurer may be able to write more risk and still retain profits due to the reduced expenses."

Shift Insurer Profile:
- "An insurer may decide to become a high risk only insured and raise rates to the level appropriate for high risks. This would decrease the size of RM."
- "Insurers may have different tiers of companies, with one focusing on high-risk customers. Residual market may become smaller then."
- "They may put offices in certain low-risk areas, so that consumers will not even apply with their company →larger residual market if consumer cannot find insurer."

In order to receive full credit, candidates needed to provide responses from two of the three categories listed above.

EXAMINER'S REPORT (BY PART, AS APPLICABLE)

Part a

The candidate was expected to know for Private Passenger auto plan for reinsurance facilities the funding mechanisms, allocation of exposures/ expenses and general operations and be able to describe the advantages of this plan in comparison to other plans. Most candidates were able to answer with at least two advantages.

Candidates were expected to respond with advantages to the insured as delineated in the text, but a number of candidates received full credit by identifying advantages to the insurance company as well.

Common errors made included wrong descriptions of how the program worked. The program's expenses were lower than other plans, losses were not spread among the entire group; losses were shared by market share.

Part b

Candidates performed well on this section. The candidate was expected to know the operations and risk transfer mechanisms of the various programs and be able to compare them.

The candidate was expected to respond that JUA's and Reinsurance Facilities both do something the same. Candidates generally scored well.
- Candidates did not receive credit where they provided similar, but not identical, functions (e.g. RF cedes a risk and JUA assigns a risk).
- Common errors were stating that both plans did something while only one plan did this action.
- Candidates were unsure sometimes on how insureds were placed in the plans.

Part c

Candidates performed well on this section. The candidate was expected to know the operations and risk transfer mechanisms of the various programs and be able to compare them.

The candidate was expected to respond that JUA's and Assigned Risk Plans both do something the same. Candidates generally scored well.

- Candidates did not receive credit where they provided similar, but not identical, functions.
- Common errors often involved identifying a feature that only one of the two programs has

Part d

The candidate was expected to know the relative advantages and disadvantage of the various programs and be able to compare them and determine which one an insured would least like to be in with one reason why.

Candidates received full credit for identifying the least preferable residual market mechanism, along with at least one plausible argument for that consumer preference

Common incorrect responses involved identifying reinsurance facility pricing as a negative, or failing to explain why the selected residual market mechanism would be least preferred.

Part e

The candidate was expected to know how restrictions by regulators on auto insurance rates would affect the residual market.

The candidate was expected to respond that the more restrictions on rating set by the regulator the less likely the insurers would want to write in the state and therefore the residual market would be larger in State B. Candidates generally performed well on this section

Candidates receiving no credit typically claimed the opposite effect: that less restrictions and better pricing would lower availability.

Part f

Overall, candidates did not perform as well on this section.

- Candidates frequently would describe an action, but then not describe **how** it would impact the residual market
- Candidates sometimes described two actions that were more or the less the same action, so only received credit for one action.
- Other actions described would be irrational market actions for the insurer, and often lead to bankruptcy. Only reasonable actions were credited.
- Others proposed actions that would have not been allowed by the state's restrictions on rating such as finding other rating classes.

QUESTION 9

TOTAL POINT VALUE: 2	**LEARNING OBJECTIVE: B1/B2/B3**

SAMPLE ANSWERS (BY PART, AS APPLICABLE)

Part a: 0.5 point

The following provide examples of responses having the necessary components to demonstrate knowledge of the topic and obtain full credit.

- To fulfill a social need of providing affordable flood coverage to the public.
- The government can initiate social reforms through instituting building codes and other rules and regulations to deal with flood mitigation.
- The federal government wanted to reduce the tax burden in the event of a catastrophe by reducing the amount of disaster relief funds needed.
- Private insurers don't have the resources to predict or gain insight of the flood risk.
- The government has the ability to borrow from the Treasury in the event of a catastrophe and can spread the payback over many years.
- Fulfill an unmet need in the private market.
- Requires federally backed mortgages to have flood insurance, so the government needs to regulate.
- Provides greater convenience since the federal government already has in place the necessary programs to support the provision of flood coverage, compared to a private insurer.
- Implement loss mitigation plans with greater efficiency than the private market.
- Promotes the social purpose of providing affordable flood insurance coverage.

Part b: 0.5 point

To provide available and affordable flood insurance coverage to the public.

Part c: 0.5 point

The following provide examples of responses having the necessary components to demonstrate knowledge of the topic and obtain full credit.

- Those who believe they are not at risk for flooding do not buy flood insurance coverage. The impact on the NFIP is low participation.

- People will not buy coverage because they know that the government will bail them out through disaster recovery funds. This has caused the NFIP be hard to financially sustain over the years.

- The government provides funding to property owners in the event of catastrophic flooding, even if the owner does not have flood coverage. Some individuals prefer to rely on this funding to rebuild their property after a flood rather than purchase flood coverage. This increases the NFIP deficit and debt to the government and reduces the effectiveness of the NFIP to mitigate the flood loss.

Part d: 0.5 point

The following provide examples of responses having the necessary components to demonstrate knowledge of the topic and obtain full credit.

- Only owners of properties subject to flood risk purchase the coverage. This results in minimal spreading of the risk, which hurts the NFIP's solvency
- Only those at high risk buy the flood insurance coverage. As a result, the NFIP is in tremendous debt.
- Only those most likely to experience flooding will purchase flood coverage. This reduces the effectiveness of the NFIP to pool and spread funds over all geographical areas.

EXAMINER'S REPORT (BY PART, AS APPLICABLE)

Overall, candidates struggled with this question.

Candidates were expected to know the reasons why the government is involved in flood insurance, the topics of adverse selection and moral hazard, and how those topics impact the performance of the NFIP. Part b was a more challenging question requiring the recall of specific knowledge of why the NFIP was constructed.

In general, candidates performed as expected on parts a, c and d. They struggled on part b. Within parts c & d, some candidates struggled with answering both parts of the question.

Part a

Candidates generally performed well on this part of the question. They were expected to list 2 reasons why government would be involved in flood insurance. A simple explanation of why government tends to be involved in insurance was sufficient for a valid reason. A common error by the candidates in this part was listing 2 separate reasons that were actually the same reason.

Part b

Candidates performed poorly on this part of the question. They were expected to give the "statutory mandate" of the NFIP, which is extremely specific. The only accepted answer was available and affordable, or a similar connotation of those words, or only one of available or affordable and an explanation of the given answer of why those are part of the "statutory mandate". The common error made by the candidates was to list a "mandate" of the NFIP, of which there are many "mandates" made by the NFIP.

Part c

The majority of candidates did not receive full credit on this part. They were expected to have an understanding of moral hazard by defining it or giving an example of how it ties into flood insurance. In addition, they were expected to explain how moral hazard impacted the NFIP itself. The common error made by the candidates was to only explain moral hazard, but they failed to explain how that explanation or example would impact the long-term viability of the NFIP.

Part d

The majority of candidates did not receive full credit on this part. Like the moral hazard question, they were expected to have an understanding of adverse selection by defining it or giving an example of how it ties into flood insurance. Once again, like part c, they were also expected to

explain how adverse selection impacted the NFIP itself. The common error made by some candidates was similar to part c, where the candidate was able to fully explain their understanding of adverse selection, but would fail to include how the explanation or example would impact the long-term viability of the NFIP.

QUESTION 10

TOTAL POINT VALUE: 3 | **LEARNING OBJECTIVE:** B1/B2

SAMPLE ANSWERS (BY PART)

Part a: 0.25 point

The following provide examples of responses having the necessary components to demonstrate knowledge of the topic and obtain full credit; any one of the following was accepted:

- If the program should terminate, the assets already accumulated under the plan are sufficient to discharge all liabilities for benefits accrued to date
- Assets greater than liabilities

Part b: 0.75 point

The following provide examples of responses having the necessary components to demonstrate knowledge of the topic and obtain full credit; any three of the following were accepted:

- Expected to operate indefinitely (will not terminate in the future)
- Compulsory (new entrants will continue to pay taxes to support the program)
- Federal government can tax or borrow to raise additional revenue
- Federal government can reduce benefits

Part c: 0.5 point

The following provide examples of responses having the necessary components to demonstrate knowledge of the topic and obtain full credit; any two of the following were accepted:

- Fully insured
- Works in a covered occupation
- Earned 40 work credits
- Worked full time for at least 10 years

Part d: 1 point

The following provide examples of responses having the necessary components to demonstrate knowledge of the topic and obtain full credit; any two of the following, including their description, was accepted:

- Survivor benefit – fully or currently insured
- Disability benefit – must have earned a certain number of credits (depending on age), satisfied a 5-month waiting period, and met the stated definition for disability
- Medicare – at least age 65

Part e: 0.5 point

The following provide examples of responses having the necessary components to demonstrate knowledge of the topic and obtain full credit; any one of the following was accepted:

- To ensure that workers who retire today and workers who retire in the future will have about the same proportion of their earnings restored at retirement
- Adjusts for inflation, CPI or the cost of living

EXAMINER'S REPORT (BY PART)

Candidates generally performed well on this question, particularly parts b and d. Candidates were generally given either zero credit or full credit on part e.

Part a

Common errors:

- Confusing fully funded with having adequate rated.

• Referring to future premiums and not current assets; to receive credit, an answer had to specify that funds currently on hand are adequate without including future contributions.
Part b
Common errors: • Giving overlapping reasons (e.g., "Program is expected to operate indefinitely" and "Program will not terminate") • Referring to intergenerational transfer, as distinct from ongoing and compulsory which ensure future participants.
Part c
Common errors: • Mentioning that the citizen must be a certain age (part of the question) • Using incorrect work credit requirements
Part d
Common errors: • Identifying unemployment insurance or Medicaid (benefits that are not administered by Social Security) • Defining the benefit and not describing the eligibility requirement(s) • Giving correct but inappropriately vague answers like "Must have worked in a covered occupation" without specifying a minimum time requirement.
Part e
Common errors: • Confusing indexing with addressing the issue of social adequacy (skewing the program towards lower income citizens) or incentivizing early/delayed retirement.

QUESTION 11

TOTAL POINT VALUE: 3 | **LEARNING OBJECTIVE: C1**

SAMPLE ANSWERS (BY PART, AS APPLICABLE)

Part a: 0.5 point

The following provide examples of responses having the necessary components to demonstrate knowledge of the topic and obtain full credit; any two of the following were accepted:

- Provision for reinsurance (change in the provision)
- Uncollected premiums and agents' balances in the course of collection
- Deferred premiums, agents balances and installments booked but deferred and not yet due
- Reinsurance recoverable on paid loss
- Bonds (capital allocation based on equities in the balance sheet)
- Uncollectible reinsurance written off
- Agents balances written off
- Investment income due and accrued
- Recoverable from parent, subsidiaries and affiliates
- Funds held by or deposited with reinsured companies
- Funds held by companies under reinsurance treaties

Part b: 1 point

The following provide examples of thorough responses having the necessary components to demonstrate knowledge of the topic and obtain full credit. Only one response was required for each of the two items identified in part a.

- **Provision for reinsurance:** Takes into account whether a reinsurer is authorized, unauthorized and slow paying, so it arbitrarily segments the provision based on reinsurer characteristics. It also takes into account whether reinsurer has posted collateral. However; the provision is strictly formulaic. It also doesn't take into account reinsurer strength. Overall, it does an adequate job at assessing credit risk.
- **Uncollected premiums and agents' balances in the course of collection:** Somewhat effective as balances over 90 days due are non-admitted. However some balanced less than 90 days overdue may not be recoverable but are not adjusted for.
- **Deferred premiums, agents balances and installments booked but deferred and not yet due:** This could be a potential source of credit risk for an insurance company once these premiums are billed and if agents do not end up paying the company what they owe. This is not really an effective measure for a regulator because it does not give any details beyond the actual number shown in the balance sheet.
- **Reinsurance recoverable on paid loss:** Effective to give a general idea of the extent of amount insurer relies on reinsurance; however, it doesn't show reinsurer strength so it's difficult to assess how likely the insurer is to recover it's recoverable.
- **Bonds (capital allocation):** If there is a huge ratio of stocks a regulator may be concerned about the volatility of these items and the ability of the third party to pay, especially if these make up a lot of the company's assets. The regulator may need to review other parts of the annual statement to understand the bond holdings and the credit risk the company faces.
- **Uncollectible reinsurance written off:** Uncollectable reinsurance allows the regulator to see how much reinsurance the company has written off during this past year. The

regulator can use this to help determine a prospective view of potential uncollectible reinsurance in the future and can help the regulator ask specific questions to the insurer about why reinsurance was uncollectible. Overall it helps regulator access credit risk but it is a retrospective measure so it may not be indicative of future collectability.

- **Agents' balances written off:** This is a semi effective measure of credit risk. It is a retrospective look but if you expect similar conditions this can be used to estimate Agents Balances charged off next year. If there are changing conditions this may not be an appropriate measure.
- **Investment income due and accrued:** This is investment income owed to the company that has not yet been paid by a third party. This is part of the RBC charge for credit risk and will allow a regulator to effectively assess how much money the insurer could lose if the third party goes insolvent.
- **Recoverable from parent, subsidiaries and affiliates:** This is an effective measure of credit risk. Receivables over 90 days past due are a non-admitted asset and are unlikely to be collected once they are that many days past due.
- **Funds held by or deposited with reinsured companies:** A company's exposure to credit risk is increased if their assets are being held by another party if that party goes bankrupt and cannot return the funds. This is not very effective for a regulator because they have no information on the company's financial strength.
- **Funds held by companies under reinsurance treaties:** If a company is holding collateral this will reduce their exposure to credit risk. It reduces unsecured reinsurance recoverable and also reduces the provision for reinsurance. This will allow the regulator to effectively assess credit risk.

Part c: 0.5 point

The following provide examples of responses having the necessary components to demonstrate knowledge of the topic and obtain full credit; any two of the following were accepted:

- Notes to Financial Statements, Reinsurance (23), Sections A, B and D
- Notes to Financial Statements, Structured settlements (27)
- Notes to Financial Statements, High Deductible (31)
- Notes to Financial Statements, Subsequent Events

Part d: 1 point

The following provide examples of thorough responses having the necessary components to demonstrate knowledge of the topic and obtain full credit; any two of the following were accepted, as long as they corresponded to the answer provided in part c.:

- Notes to Financial Statements on reinsurance "provides information on specific liabilities for which the credit risk may be heightened." It allows the users to assess the impact of individual entities that could pose significant credit risk to the insurance company. It does not, however, addresses reinsurance credit risks other than those related to unsecured recoverables, recoverables in dispute and recoverables that have been deemed uncollectible, which are partially quantified in provision for reinsurance.

- Notes to Financial Statements on structured settlements "disclose the total amount of structured settlement payments for which an insurer could be held liable. Furthermore, if the amount of these remaining payment from a single life insurance company exceeds 1%

of surplus, specific disclosure of the amount and the company from which the structured settlement was purchased is required." This note effectively addresses "a potential … credit risk that is not reflected on the balance sheet." It is effective in assessing the credit risk of structured settlements because it allows the users to conduct further review on the financial condition of the individual entities that provided structured settlement.

- For unpaid claims, the portion of the unpaid amount within the deductible is not included within the insurance company's booked loss reserve in the Annual Statement. The treatment for both paid and unpaid deductible losses creates a credit risk for the insurer due to the possibility that the insured will not reimburse them for the deductible portion of the loss." Notes to Financial Statements on high deductible addresses another potential credit risk that is not reflected on the balance sheet. It is effective in assessing the credit risk of LDD policies because it helps the users understand the potential impact of this credit risk relative to the total unpaid claims and to the company's surplus.

- Subsequent events: If this note discloses a large cat event that has occurred after the date of the financial statements, this could pose a credit risk to the insurer because of the large recoverable that could be due from the reinsurer. This is only mildly effective for a regulator to assess credit risk because they only know that a significant event occurred but not the amount of losses covered by the reinsurer.

EXAMINER'S REPORT (BY PART, AS APPLICABLE)

- Generally candidates scored better on parts a. and b. versus parts c. and d.
- There are many potential causes of credit risk for an insurance company and overall candidates did a good job describing how each of the items they listed opened the company up to credit risk. A common theme where some candidates missed points was that they fell short of adequately explaining how a regulator could either effectively or ineffectively use the balance sheet elements, income statement elements or Notes to Financial statements to determine credit risk for the insurance company.

Part a

Overall candidates scored well on this part. Common errors were listing items not actually included in the balance sheet or income statement.

Part b

There are many potential causes of credit risk for an insurance company and overall candidates did a good job describing how each of the items they listed opened the company up to credit risk. A common theme where some candidates missed points was that they fell short of adequately explaining how a regulator could either effectively or ineffectively use the balance sheet elements or income statement elements to determine credit risk for the insurance company.

Part c

A candidate who simply listed two items from the Notes to Financial Statements that related to credit risk was given full credit. Candidates were expected to know and understand Notes to Financial Statements and how these pertained to the health of an insurance entity. A common error was listing a note in the financial statements that was not directly related to credit risk. There were less candidates who scored full credit on this part compared to part a.

Part d

There are many potential causes of credit risk for an insurance company and overall candidates did

a good job describing how each of the items they listed opened the company up to credit risk. A common theme where some candidates missed points was that they fell short of adequately explaining how a regulator could either effectively or ineffectively use the Notes to Financial Statements to determine credit risk for the insurance company.

QUESTION 12

TOTAL POINT VALUE: 3.5 | **LEARNING OBJECTIVE: C1**

SAMPLE ANSWERS (BY PART, AS APPLICABLE)

Part a: 1.25 points

Surplus(prior) + Net Income + Direct Charges to Surplus = Surplus(Current)
Surplus(prior) + Net Income + Change in Unrealized capital gain – Change in Non-Admitted assets – Dividends to stockholders = Surplus (Current)

5000 + Net Income + 50 - (400-225) - 100 = 5600
NI = 5600 - 5000 - 50 + 175 +100 = 825

Because the change in net unrealized capital gains is presented both pre- and post-tax in the annual statement, credit was also given when candidates assumed a 35% tax rate (e.g. a deferred tax liability) on the change in net unrealized capital gains.

5000 + Net Income + 50 × (1-35%) - (400-225) - 100 = 5600
NI= 5600 - 5000 - 32.5 + 175 +100 = 842.5

Part b: 2.25 points

The following provide examples of thorough responses having the necessary components to demonstrate knowledge of the topic and obtain full credit; any three of the following were accepted:

- Notes to the Financial Statements: If the Note on Change in Incurred Loss and Loss Adjustment Expense showed that there was minimal development on prior year losses, this would support the actuary's assertion that reserves were adequate
- Notes to the Financial Statements: Note of reinsurance, specifically Section E, would note if there were any commutations in the past year. Commutations of previously ceded reinsurance would increase the net reserves since the loss reserves are recorded as net and associated ceded balances are eliminated.
- Notes to the Financial Statements: The notes (and/or Schedule F, Part 1) could indicate if there was an increase in an intercompany pooling percentage. Reserves could be adequate but still greater this year than past years if the company has a greater share of the intercompany pooling.
- General Interrogatories: Merger and/or acquisition activity in the past year which involved an increase in business and/or prior year reserves could result in an increase in reserves for reasons other than reserve inadequacy
- Five Year Historical Data: Several answers from this exhibit were accepted to the extent that they suggested an increase in reserves that would not imply a reserve inadequacy in prior years:
    - Significant growth in net premium would result in an increase in reserves
    - A change in the mix of business from property (short-tail) to liability (long-tail) lines generally increases the reserves
    - A change in the mix of business from liability to property lines if coupled with catastrophes in the current AY would increase the reserves
    - An increase in the percentage of retained premium (net premium / gross premium) would indicate that more reserves are being retained in the current accident year

- Schedule F, Part 3: Decreased usage of reinsurance compared to prior years since reserves are recorded net of reinsurance
- Schedule F, Part 1: Increased assumption (and retention) of reinsurance over the calendar year since reserves are recorded net of reinsurance
- Schedule P, Part 2: If there was minimal development of incurred (ultimate) losses and loss adjustment expense in prior years, this would support the actuary's assertion
- Schedule P: If ultimate losses remained unchanged but loss payments slowed down in CY 2013, then reserves would increase for reasons other than reserve inadequacy. Payment patterns in particular could be evaluated through Schedule P, Part 3.
- Other areas of the annual statement that were used to support an increase of reserves in the current year included
    - Schedule T
    - IEE
    - Underwriting & Investment Exhibit
    - Page 14 (state pages)

EXAMINER'S REPORT (BY PART, AS APPLICABLE)

Candidates generally received at least partial credit on part a. but many did not perform well on part b.

Part a

Candidates were expected to solve for the net income as presented in the Capital and Surplus Account section of the Income Statement. Based on the information given in the problem (e.g. not underwriting income, investment income, etc.), they were expected to recognize that the change in surplus and related direct charges to surplus should be used.

Common errors included incorrectly including extra components in the formula, incorrectly omitting components, and/or using the wrong signs for the direct charges to surplus.

Part b

Candidates generally performed poorly on part b). Many candidates that were able to identify acceptable parts of the annual statement were not able to describe how those parts could be used to support the actuary's assumption. Common errors included:

- Identifying items not found in the annual statement sections described in the question
- Describing items that would support an increase in prior accident year reserves which would contradict the actuary's assertion
- Specifically many responses addressed average case reserves or suggested independently calculating incurred (ultimate) loss and loss adjustment expenses. These responses were given no credit when they were used to conclude that the total loss and loss adjustment expense reserves (including IBNR) were inadequate.
- Failing to describe how the identified part of the annual statement would support the actuary's assertion

QUESTION 13	
TOTAL POINT VALUE: 4.25	**LEARNING OBJECTIVE: C1**
SAMPLE ANSWERS (BY PART, AS APPLICABLE)	

Part a: 3.75 points

The following provide examples of responses having the necessary components to demonstrate knowledge of the topic and obtain full credit:

Sample 1
Allocated Surplus = Average Surplus × Surplus Ratio
= 0.5 x (133,000+157,000) x 123,680/244,920
= 145,000 x 0.505 = **73,225**

Home: Earned Premium + Average Loss Reserve + Average UEPR
=69,000 + 0.5 × (23,800+27,600) + 0.5 × (28,560 + 29,400) = 123,680
Total: Earned Premium + Average Loss Reserve + Average UEPR
=135,000 + 0.5 × (51,600+54,000) + 0.5 × (55,440 + 58,800) = 244,920

Pretax Profit = (UW income + Allocated Investment Income + Other Income)
=[(EP – IncLoss – Comm – TLF – Other Acq – General Exp) +(Homeowners Investment Gain)+ (Finance Charges not included in Premium – Fines and Penalties)]
=[(69,000-42,000,14,000-1,400-3,500-5,520) +(10,530) + (2100-690)]
=(2,580+10,530+1,410) = **14,520**

Pretax Return = Pretax Profit / Allocated Surplus = 14,520/73,225 = **19.8%**

Sample 2
Allocated Surplus = Total Surplus Ratio × Homeowners Surplus
= 0.5 × (133,000+157,000)/244,920 × 123,680
= 0.592 × 123,680 = **73,218** (difference from sample 1 due to rounding)

Home: Earned Premium + Average Loss Reserve + Average UEPR
=69,000 + 0.5 × (23,800+27,600) + 0.5 × (28,560 + 29,400) = 123,680
Total: Earned Premium + Average Loss Reserve + Average UEPR
=135,000 + 0.5 × (51,600+54,000) + 0.5 × (55,440 + 58,800) = 244,920
======
Homeowners Investment Gain *(while given some can be calculated from given information)*
Net Inv Gain Ratio = (Net Inv Earned + Net Realized Cap Gains)/Total Investable Asset
= (3,000 + 18,000)/ 241,320 = 8.7%

Total Investable Asset = Mean of Total Loss and LAE Reserves + Mean Total UEPR + Mean Total Policy Surplus – Mean Total Agent Balance
= 0.5 × (51,600+54,000+55,440+58,800+133,000+157,000-13,200-14,000) = 241,320

Net Investment Gain for Homeowners = Net Inv Gain Ratio × [(Mean HO Loss &LAE + Mean HO UEPR – Mean HO Agent Balance) + HO Allocated Surplus]
= 0.087 × [0.5 × (23,800+27,600+28,560,+29,400-6,800-7,000)+73,218] = 10,527
(Given was 10,530)
=======

Pretax Profit = (UW income + Allocated Investment Income + Other Income) =
[(EP – IncLoss – Comm – TLF – Other Acq – General Exp) +(Homeowners Investment Gain)+
(Finance Charges not included in Premium – Fines and Penalties)]
=[(69,000-42,000,14,000-1,400-3,500-5,520) +(10,527) + (2100-690)]
=(2,580+10,527+1,410) = **14,517**

Pretax Return = Pretax Profit / Allocated Surplus = 14,517/73,225 = **19.8%**

Part b: 0.5 points

The following provide examples of responses having the necessary components to demonstrate knowledge of the topic and obtain full credit; any two of the following were accepted, providing two thoughts is consistent with a response for an "explain" question:

- There is no adjustment for the inherent risk of certain lines
- Method is formulaic and does not account for differences in risk
- Example: Catastrophe exposure in Homeowners
- Method is retrospective rather than prospective
- Does not account for changes in mix of business
- Same treatment despite differences between short-tailed and long-tailed lines
- Does not account for premium growth

EXAMINER'S REPORT (BY PART, AS APPLICABLE)

Part a

Generally candidates scored well on part a. Common errors included:

- Failing to use average values for surplus, UEPR, & loss reserves
- Including agent balances in allocated surplus calculation and/or the Underwriting Income
- Only including half of the General Expenses when calculating the Underwriting Income
- Incorrectly calculating Other Income by adding Fines and Penalties to Finance Charges
- Incorrectly subtracting Other Income rather than adding to Pre-Tax Profit
- Not recognizing that Homeowners Investment Gain was given and making calculation errors when calculating from the other provided information *(see Sample Answer 2 for calculation from provided information)*
- Correctly calculating Pretax Profit and Allocated Surplus but failing to calculate the Pretax return as a percentage of the Surplus

Part b

Generally candidates scored well on part b., with majority of candidates receiving half or full credit. The question has the key word "explain" and is worth 0.5 points. Candidates were expected to provide two reasons NAIC's prescribed method of allocating surplus in the IEE may not be appropriate for all lines of business. Candidates who did not achieve full credit generally only provided one valid reason.

QUESTION 14

TOTAL POINT VALUE: 3 | **LEARNING OBJECTIVE: C1**

SAMPLE ANSWERS (BY PART)

Part a: 2.5 points

Sample 1

All Claim Closure = All Closed Claims (Reported – Outstanding) / Reported Claims
= [Part 5D (Section 3) – Part 5D (Section 2)] / Part 5D (Section 3)

	2009	2010	2011	2012	2013
2009	67.5%*	84.2%	91.7%	92.1%	97.4%
2010		64.9%	86.4%	95.7%	98.0%
2011			66.7%	92.9%	100.0%
2012				71.4%	85.7%
2013					80.0%

* 67.5% = (40 – 13)/40

Purpose: To monitor the speed that claims are settled.

Result: As of 12 months of development, claims are settled more quickly.

Sample 2

Claims Outstanding = Outstanding Claims / Reported Claims
= Part 5D (Section 2) / Part 5D (Section 3)

	2009	2010	2011	2012	2013
2009	32.5%*	15.8%	8.3%	7.9%	2.6%
2010		35.1%	13.6%	4.3%	2.0%
2011			33.3%	7.1%	0.0%
2012				28.6%	14.3%
2013					20.0%

* 32.5% = 13 /40

Purpose: To identify any changes in claims settlement practices.

Result: The 12 month diagonal shows a decreasing percentage of claims outstanding, which indicates that claims are closing quicker.

Sample 3

Claim Closure Rate = Claims Closed with Payment / Reported Claims
= Part 5D (Section 1) / Part 5D (Section 3)

	2009	2010	2011	2012	2013
2009	22.5%*	29.8%	33.3%	30.3%	32.1%
2010		24.3%	31.8%	38.3%	38.8%
2011			23.8%	39.3%	41.4%
2012				21.4%	33.3%
2013					20.0%

* 22.5% = 9 / 40

Purpose: This analysis reveals changes in the rate at which claims are settled.

Result: It appears that claim settlement is slowing down at 12 months of development, but is increasing for 24, 36 and 48 months of development.

Sample 4

Claims Closed w/Pay = Closed with Payment Claims / Total Closed Claims
= Part 5D (Section 1) / [Part 5D (Section 3) – Part 5D (Section 2)]

	2009	2010	2011	2012	2013
2009	33.3%*	35.4%	36.4%	32.9%	32.9%
2010		37.5%	36.8%	40.0%	39.6%
2011			35.7%	42.3%	41.4%
2012				30.0%	38.9%
2013					25.0%

* 33.3% = 9 / (40 – 13)

Purpose: To see if there is a change in claims closed with pay compared to total closed claims, which could highlight a change in the claims settlement process.

Result: The trend shows that at 12 months of development, the closed with pay ratio is decreasing.

Sample 5

Claim Frequency = Reported Claim Counts / Earned Premium
= Part 5D (Section 3) / Part 6D (Section 1)

	2009	2010	2011	2012	2013
2009	1.90%*	2.12%	2.20%	2.79%	2.86%
2010		2.66%	2.66%	2.82%	2.94%
2011			1.11%	1.43%	1.49%
2012				0.69%	1.02%
2013					0.84%

* 1.90% = 40 / 2,104

Purpose: To identify changes in the rate claims are reported relative to earned premium, which is a proxy for exposure.

Result: Frequency appears to be decreasing as of 12, 24 and 36 months of development.

Sample 6

Claim Severity = Incurred Loss / Reported Claims
= Part 2D / Part 5D (Section 3)

	2009	2010	2011	2012	2013
2009	28.45*	18.40	18.82	14.09	12.03
2010		30.76	25.23	19.13	15.27
2011			56.52	31.21	21.55
2012				79.43	45.62
2013					63.73

* 28.45 = 1,138 / 40

Purpose: Average severity trend analysis shows how the average severity of reported claims has changed over time.

Sample Result 1: As of 12 months development, there has been an increase in the average severity from AY 2009 to AY 2012 followed by a decrease in AY 2013. For the other diagonals, there is a clear increase in the average severity.

Sample Result 2: Moving across each AY row, there is a decreasing trend in average severity. This could be an indication that the company is over-reserving when a claim is initially reported and then drops the reserve as time goes on.

Sample 7

Claim Severity x No Pay = Incurred Loss / (Claims closed with payment + claims outstanding)
= Part 2D / [Part 5D (Section 1) + Part 5D (Section 2)]

	2009	2010	2011	2012	2013
2009	51.73*	40.35	45.16	36.93	34.74
2010		51.73	55.50	44.95	37.40
2011			98.92	67.23	52.08
2012				158.86	95.80
2013					159.33

* 51.73 = 1,138 / (9 + 13)

Purpose: To see if the average incurred amount per claim (excluding closed with no pay) is changing over time.

Result: For each 12, 24 and 36 month development diagonal, the average severity has increased since AY 2010.

Sample 8

Incurred Loss Ratio = Incurred Loss / Earned Premium
= Part 2D / Part 6D (Section 1)

	2009	2010	2011	2012	2013
2009	54.1%*	38.9%	41.3%	39.3%	34.4%
2010		81.9%	67.1%	53.9%	44.8%
2011			62.8%	44.8%	32.1%
2012				54.7%	46.5%
2013					53.5%

* 54.1% = 1,138 / 2,104

Purpose: To show the change in loss ratios over time.

Sample Result 1: As of 12, 24 and 36 months of development, the loss ratio has decreased since AY 2010.

Sample Result 2: The analysis shows decreasing loss ratios for each AY as the months of development increase.

Part b: 0.5 point

The following provides examples of responses having the necessary components to demonstrate knowledge of the topic and obtain full credit; any two of the following received full credit:

- Claim counts are on a reported basis instead of ultimate.
- Frequency trends using earned premium can be misleading due to the effect of rate changes.
- Consideration should be made for changes over time in a company's mix of business, policy limits, reinsurance attachment points and limits.
- Schedule P data includes voluntary/involuntary pools as well as inter-company pooling arrangements.
- Schedule P is net of reinsurance.
- Schedule P combines loss and DCC together, which may hide a trend in each component.
- Schedule P only contains 10 years of data, which is insufficient to analyze a long tailed line of business.
- Schedule P can be distorted by commutations.
- The underlying cause for trends can only be obtained through discussion with company management.
- Some companies record claims on a per-claim basis and others on a per-claimant basis.
- Schedule P Parts 2-6 are not audited like Part 1.
- Schedule P Part 2D does not include AAO expenses.
- Schedule P is net of salvage & subrogation.
- If there is a catastrophe, the claims department may not be able to keep up with number of claims reported.
- Schedule P does not include retroactive reinsurance.
- Schedule P displays accident year losses, but calendar year/exposure year earned premium.
- Certain allocations and presentations are left up to the interpretation of the person completing Schedule P.

EXAMINER'S REPORT (BY PART, AS APPLICABLE)

- The candidate was expected to know Schedule P data/triangles, the limitations of the data, and how to perform a trend analysis using two of the triangles provided.

Part a

- The candidate was expected to be knowledgeable on the Schedule P triangles provided and use two of the triangles to perform a trend analysis. This includes stating the purpose and conclusion of the trend analysis.
- To obtain full credit, a candidate was expected to perform a reasonable trend analysis using at least two of the triangles provided. The calculations needed to be accurate and the purpose and result needed to be clearly stated.
- Common errors included forgetting to state the purpose of the trend analysis and small calculation errors in the analysis.
- We note that a common misinterpretation was that two separate trend analyses were required, and many candidates provided two trend analyses. However the question asks to "perform a trend analysis". In accordance with the Instructions to the exam, only the first response was graded.

Part b

- The candidate was expected to know limitations of Schedule P data when using the triangles for a trend analysis.
- To obtain full credit, a candidate was expected to provide two accurate limitations.

- Common errors included responses that were not accurate for Schedule P. As an example, some candidates said that Schedule P data was not broken out by line of business, which is not a true statement.
- Some candidates provided a limitation of their analysis or the data provided in the question, instead of a limitation of the underlying Schedule P data. As an example, some candidates who calculated average severity using the incurred loss & DCC and reported claims triangles stated that you cannot see if the average paid is changing. Schedule P includes a paid triangle, which could have been used for an average paid analysis, if the question had included a paid triangle. This response did not receive credit.

QUESTION 15

TOTAL POINT VALUE: 4	**LEARNING OBJECTIVE: C1**

SAMPLE ANSWERS (BY PART, AS APPLICABLE)

Part a: 2.5 points

Slow paying formula: (Recoverable over 90 days due) / (Total Recoverable + Paid in the last 90 days) = 120 / (280 + 37) = 38%.
Is the reinsurer slow paying? 38% > 20%, yes slow paying.
Provision = Max(Unsecured Recoveries, Recoverable over 90 days due) × 20%
Max (280 – 100, 120) × 20% = 180 × 20% = **36**.

Part b: 0.5 point

The following provide examples of responses having the necessary components to demonstrate knowledge of the topic and obtain full credit; any one of the following received full credit:

- Change contract to say the reinsurer pays in specific number of days; Impact: some claims would no longer be overdue, and the reinsurer would no longer be considered slow paying
- Require more collateral; impact: the unsecured reinsurance would be lower.
- Reduce quota share %; impact: lowers reinsurance liability
    - Note: this answer got full credit because it is technically true, even though this was not really the intended answer.

Part c: 1 point

The following provide examples of responses having the necessary components to demonstrate knowledge of the topic and obtain full credit; any two of the following received full credit:

- The statutory provision is an arbitrary formula; the Statement of Actuarial Opinion (SAO) outlines qualitative risks and opportunities.
- The formula used is arbitrary and may provide a false sense of security, but the SAO can better describe default risk.
- Statutory provision does not account for contract specific nuances, whereas the SAO may add more color on this.
- The statutory provision is strictly quantitative, but the SAO incorporates both qualitative and quantitative information.
- The SAO takes into account outside information like insurer ratings and management's assessment of risks; the statutory provision is based on just schedule F data.
- Statutory provision is retrospective, but the SAO factors in prospective information (such as management's input or financial ratings).
- The Statutory provision does not take into account CAT loss risk for reinsurers, but the SAO can add more color on this topic.
- The statutory provision is the minimum reinsurance provision, but the appointed actuary may believe the default/payment risk is greater and recommend a higher provision.
- Statutory provision is prospective, because it assumes 20% of unsecured recoveries (or recoveries 90 days past due) are at risk for default in the future; the SAO may be based on past experience from the reinsurer and past default history.
    - See the examiner's report below. This response gets full credit only because a rationale is given. Had no explanation for why been given, this answer would not

get full credit.

- Statutory provision covers multiple years but the SAO can better address specific time periods.
- The Statutory provision only covers prospective reinsurance, but the SAO covers both prospective and retrospective reinsurance.

Note: full credit was given if the candidates mixed and matched the SAO vs. statutory provision comments in some of the bullet points above.

EXAMINER'S REPORT (BY PART, AS APPLICABLE)

Part a

Candidates generally did well on this question.

- The candidate was expected to know the formula for the slow paying test, how to interpret the results, and the formula for the provision for a slow paying insurer.
- The candidate needed to perform slow paying test correctly, arrive at the correct slow paying ratio, determine that the reinsurer is slow paying, and calculate the provision for reinsurance correctly, which includes writing down the correct formula (including MAX(unsecured, over 90 days due).
- Common errors include:
  - Not including the paid in the last 90 days in the denominator of the slow paying test.
  - Adding the unsecured recoverable claims to recoveries past due instead of taking the maximum.
  - Making the following math error: 20% × MAX($180,$120) = $90

Part b

Candidates did satisfactory on this question, but many didn't elaborate enough.

- The candidate was expected to know enough about the statutory reinsurance provision to be able to suggest a change to the reinsurance contract to reduce the provision amount.
- The candidate needed to state a change to contract and explain why it would reduce the provision for reinsurance.
- Common errors include:
  - Not explaining why the change would reduce the provision for reinsurance.
  - Recommending a change that is not contractual.

Part c

Candidates generally did well on this.

- Common errors:
  - Stating the statutory provision is prospective and the SAO is retrospective with no explanation; if the candidate gave a compelling argument for why this is true, he or she did end up getting full credit. The text states that the statutory provision is for prospective reinsurance, not that the measure itself is prospective; by this logic, the SAO would also be prospective.
  - Some candidates provided only one difference between statutory provision and the SAO.

QUESTION 16

TOTAL POINT VALUE: 5	**LEARNING OBJECTIVE: C2**

SAMPLE ANSWERS (BY PART, AS APPLICABLE)

Part a: 0.75 point

IRIS 11 = 18.9% = 18000/ 95000
Usual as < 20%

Part b: 0.75 point

IRIS 12 = 27.2% = 25000/ 92000
Unusual as > 20%

Part c: 1.5 point

106/109=97.2%
121/112=108.0%
Average: 102.6%

148000 × 102.6%=151,909.73
Held Reserves: 125,000
Deficiency: 26,909.73
IRIS 13: 26,909.73/101,000=26.6%

Unusual as >25%

If one year and two year development were calculated incorrectly in part a and/or b, then candidates could still receive full credit on part c. As an example, candidate calculated one year development as 18000 and two year development as 30000.

$$\frac{\text{Average}\left(\frac{(81000+30000)}{109000},\frac{(103000+18000)}{112000}\right)\times 148000-125000}{101000}=30\%$$

>25% Unusual

Part d: 1 point

The following provide examples of responses having the necessary components to demonstrate knowledge of the topic and obtain full credit; any one of the following received full credit:

- Prior year IRIS ratios are all within the usual range whereas 2013 has Ratio 12 and 13 outside the usual range with ratio 11 close to threshold. 2013 seems to have brought significant adverse development to the company's reserves. Also of note is the sharp increase in premium from 2012 to 2013 could lead to an overstated ratio 13.
- All three ratios have fallen inside usual range. However, the ratios 11 and 12 have been trending upward and ratio 12 and 13 now fall outside usual range. This indicates the reserve development from GL may be emerging several years later due to long tail nature. EP also increased significantly.
- Given IRIS 12 and IRIS 13 have increased to unusual values and IRIS 11 is now close to unusual it seems like the insurer is under reserving. There has also been premium growth

and mix of business change due to GL.

Part e: 1 point

The following provide examples of responses having the necessary components to demonstrate knowledge of the topic and obtain full credit; any two of the following received full credit (along with the brief description of the limitation of each):

SAO

- Limitation is that SAO does not contain Actuary's estimate so it may provide less info than required.
- This only addresses reserve adequacy, not a holistic evaluation of financial impairment

AOS

- This tool is confidential

Credit Rating Agencies

- Ratings agencies core analysis is once a year and may not be able to identify a troubled insurer in time.
- Rating agencies don't respond quickly to changing conditions
- Proprietary formulas

ATS

- Team does not have regulatory authority
- Limited resources; cannot analyze all companies

FAST

- These are not public so the opining actuary will not have knowledge of their findings
- Ratios can be distorted if insurers manipulate the reserves

Scoring System

- Doesn't take into account qualitative risk assessment such as discussion with management regarding risks and reinsurance collectability

Insurer Profile System

- Only uses quantitative measures
- Retrospective and may not provide insight into future

Five Year Historical Exhibit

- Historical may not be representative of current book
- Retrospective, not prospective look

Annual Statement or Other Financial Statements

- Doesn't reveal management's insights or motives
- May hide trouble if company deliberately underreserves or acts fraudulently.

ORSA

- Not widely used in US and lack of experts in the area
- Can be swayed by company self interest

Internal Capital Models

- Hard for a regulator to review since each company's model will be different
- Integration of economic variables may cloud the volatility derived from solely capital position

FAD

- Does not have regulatory authority

FAWG

- Has no regulatory authority to take action
- Limited data available to this group (access mostly to public data)

Solvency II

- Uses internal models. Hard to compare results from different companies
- Not yet mandatory for all US insurers

Onsite Exams

- Regulatory fallibility could cause regulators to be incorrect and misevaluate financial impairment
- Costly and time consuming

EXAMINER'S REPORT (BY PART, AS APPLICABLE)

- The candidates were expected to know IRIS Ratios 11 through 13 in regards to calculation and unusual range values. The candidates were expected to take the given IRIS ratios from prior years and interpret the movement in ratios through 2013 and provide reasons for that movement. Finally, the candidates were expected to identify other tools which help categorize companies at risk of financial impairment as there are many tools available.
    - Overall, the candidates performed well on this question. Candidates had difficulty with part d of the question.
    - Part d of the question was more challenging as it required candidates to provide an interpretation of results.

Part a

Candidates performed very well on this part of the question. Common errors included calculating one year development incorrectly, using earned premium in denominator and referencing the incorrect usual range.
Part b
Candidates performed very well on this part of the question. Common errors included using earned premium in denominator, calculating two-year development incorrectly, and referencing the incorrect usual range.
Part c
Candidates performed very well on this part of the question. Common errors included not developing losses correctly and referencing the incorrect usual range.
Part d
This part of the question was more challenging as interpretation was required. Common errors included not identifying the change in prior ratios as question specifically referenced prior ratios. Candidates did not identify appropriate reasons behind movement in ratios. A common error occurred when candidates only specified the 2013 ratio was usual/unusual which was already done for parts a through c. A candidate needed to interpret ratios across all years.
Part e
Candidates performed well on this part of the question with a multitude of answers. Common errors included not providing two tools, not identifying a limitation, providing a fact about the tool rather than a limitation, or not providing a specific limitation about the tool which was mentioned.

QUESTION 17

TOTAL POINT VALUE: 3.25	**LEARNING OBJECTIVE: C4**

SAMPLE ANSWER

RTI = UW profit + 20% UEPR + Change in loss reserve discount
+ taxable investment income + realized gains
= -6 + 20%(120 - 100) + (0.05 × 550 - 0.08 × 500)
+ 200 × 13%
+ 250 × 10% × 15% (proration provision) + 2 = 17.25
Dividends from controlled are 100% tax exempt => no proration provision as per the paper.
AMTI = 17.25 + 75% income that escapes taxation
= 17.25 + 75% (250 × 10% × 85% + 8)
= 39.1875
RIT = 17.25 × .35 = 6.0375
AMIT = 39.1875 × .2 = 7.8375
AMIT > RIT => income tax = 7.8375M

EXAMINER'S REPORT

The question required the candidate to calculate the income tax for an insured. It required the candidate to know how various sources of underwriting and investment income are taxed. Additionally, it required the candidate to know what elements of income are included in statutory underwriting income and how to convert the elements to a tax basis.

Full credit was given for

- Calculating the bond income
- Prorating the taxable bond income
- Adjusting statutory underwriting income to a tax basis
- Calculating regular taxable income
- Calculating alternative minimum taxable income
- Calculating regular income tax and alternative minimum income tax and determining which is the final income tax

Most candidates knew how to apply the tax rates to produce regular income tax and alternative minimum income tax and knew that the final tax was the maximum of the two. Most candidates knew the general concept of regular taxable income and were able to recall alternative tax formula and apply it properly.

Common mistakes:

- Candidates assumed the dividend income was only partially tax exempt, even though the question stated that it was controlled
- Candidates assumed the dividend income was not tax exempt at all
- Candidates adjusted statutory underwriting income by the change in discounted reserves rather than the change in reserve discount
- Candidates adjusted statutory underwriting income by subtracting the change in reserve discount instead of adding it
- When calculating the bond income, candidates used the bond face value instead applying the coupon rates

- Candidates included unrealized capital gains in taxable income
- Candidates mistook underwriting profit for total profit (which would include investment income)

QUESTION 18	
TOTAL POINT VALUE: 2	**LEARNING OBJECTIVE: C3**
SAMPLE ANSWERS (BY PART, AS APPLICABLE)	

Part a: 0.5 point

Candidates received full credit for two of the following responses that reflect different ideas:

- Allow regulators and NAIC to aggregate financial information more easily
- Financial information is comparable between companies
- Consistency in reporting allows for more reliable and efficient analysis by regulators
- To provide further national uniformity to financial reporting
- To standardize financial reporting for insurers
- Ease regulatory burden of insurers that operated in multiple states
- Makes it easier for companies operating in multiple states to complete financial statements
- Provide efficiency of reporting
- Simplifying the process
- Lower costs to insurers since they don't have to alter the way they report financials for each state
- Require certain disclosures for regulators to easily detect risks
- Rules of SAP are clear and easily interpreted.

Part b: 0.25 point

Candidates received full credit for any of the following responses:

- Statements of Statutory Accounting Principles (SSAPs)
- NAIC's Accounting Practices and Procedures Manual (APPM)

Part c: 0.75 point

Candidates received full credit for any of the following responses:

- Utilize hierarchy including SSAPs, findings of working groups, non-binding GAAP literature.
- SSAP, Emerging Accounting Issues Working Group, NAIC Annual Statement Instructions, Certain GAAP Publications. Sources are to be considered in the order listed.

Candidates received partial credit for any of the following responses:

- Contact the DOI in the state of domicile.
- Seek guidance from the NAIC.

Part d: 0.5 point

Candidates received full credit for any two of the following responses:

- An error is material if it affects the decision-making of an end-user or a conclusion that he/she reached or causes the statement to be misleading
- Consider the error as a % of DWP or % of policyholder surplus
- Percentage difference from actual amount in the financial statement
- Will the error trigger an RBC company action level if triggered?
- Would it cause the insurer to breach IRIS or RBC ratios?
- Would the error change a profit into a loss?
- Whether it will change a reserve analysis opinion in SAO
- Will the error cause a drop in the financial strength ratings?
- Context, as the relative size of the error is more important than the absolute size / How

does the error compare to the overall amount?
- Whether the error, although small, arose out of unusual activity
- The preparer should determine how precise the financial statement item is. As precision increases, the smaller the variation may be considered material.

EXAMINER'S REPORT (BY PART, AS APPLICABLE)

To respond successfully to this question, candidates needed to understand the purposes of codification of SAP; identify either the SSAPs or the NAIC Accounting Practices and Procedures Manual as the source publication for preparing and issuing statutory financial statements for companies in the U.S.; be able to fully describe the process by which to find guidance for preparing statutory financial statements when the SSAPs do not provide appropriate guidance (as described in the Statutory Accounting Principles Preamble; and describe considerations for a preparer of statutory financial statements in making a judgment as to whether an error contained in a financial statement is material (as described in the Statutory Accounting Principles Preamble).

Overall candidates had difficulty with all subparts of this item. The primary source of difficulty appeared to be due to inadequate coverage of these topics in preparation for the exam.

Part a

- Candidate was expected to know the purpose of codification as described in the Statutory Accounting Principles Preamble or Financial Reporting Through the Lens of a Property/Casualty Actuary Introduction.
- To obtain full credit the candidate needed to identify two of the purposes of codification discussed in either of these sources. If more than two purposes were presented, the first two were evaluated for grading purposes.
- Common incorrect responses included
    - to ensure a conservative view of solvency
    - to protect the policyholder's interests
    - to have a liquidation view
    - to bring SAP more in line with GAAP
    - provide guidance in accounting principles
    - remove management judgment
    - to have written rules to follow
    - easy to track modifications
    - clarity
    - not subject to manipulation
    - desire for increased transparency
    - increased international business is increasing the need for consistent accounting with other countries
- Candidates who described two essentially synonymous purposes (e.g. "uniformity" and "consistency" were viewed as having presented a single concept.
- A number of candidates did not understand what was meant by "codification"

Part b

Candidates generally did poorly on this section and were unable to identify the exact publication. Some candidates identified the NAIC which is the organization that promulgates the SAPs instead of the publication itself. Another common wrong answer was the Instructions for the Annual Statement Blanks.

Part c

Candidates struggled with fully describing the process to find guidance if the source publication does not provide it. To receive full credit, the answer needed to discuss multiple sources and reference a hierarchy or order to which the sources referenced should be used. They generally needed to include a Level 2, 3, 4 or 5 source. Level 1 was also accepted if SSAP wasn't already identified in part b. A common answer received was to contact regulators, the DOI or the NAIC. While this is certainly one step that can be taken, that answer alone wasn't enough to receive full credit. Somewhat less common wrong answers were to reference ASOPs, consult with a reserving actuary or CPA, or contact the SEC.

Part d

- Candidate was expected to know considerations for making a judgment about materiality when confronted with an error in a statutory financial statement (as described in the Statutory Accounting Principles Preamble).
- To obtain full credit the candidate needed to identify two of the considerations specifically related to evaluating an error in a statutory financial statement. If more than two considerations were presented, the first two were evaluated for grading purposes.
- Common incorrect responses included
    - It would affect/impact the user (the candidate needed to explain that the presence of the error would impact the user's decision)
    - The intended user
    - Compare error to materiality standard / relation to materiality standard
    - Size of error (the candidate needed to discuss that the relative magnitude of the error must be considered)
    - Was error purposely misleading?
    - The intended user's sophistication
    - The amount of time that has passed since the statement was issued
    - Prudent person consideration
- Candidates presenting synonymous considerations were given credit for one consideration (e.g. 1) impact user's decision-making; 2) make the financial statement misleading)

QUESTION 19

TOTAL POINT VALUE: 2.5	**LEARNING OBJECTIVE: C2**

SAMPLE ANSWERS (BY PART, AS APPLICABLE)

Part a: 1 point

- Component 1: RBC formula - formula results in a minimum level of required capital determined
- Component 2: RBC Model Law - provides the state insurance regulator with authority to take specific action when a company's RBC ratio falls below certain thresholds

Part b: 0.5 point

The following provide examples of responses having the necessary components to demonstrate knowledge of the topic and obtain full credit; any two of the following received full credit:

- Considers material risks for insurance companies
- Calculations reflect risks unique to the specific company
- Based on Annual statement data or Statutory Account principles
  (Included in this bullet are the below acceptable answers):
  1. Data is verifiable and reliable
  2. Data is subjected to accuracy and completeness tests
  3. Data is Audited and Reserved are opined upon
  4. Standardized/uniform data and formula
  5. Data is difficult to manipulate
  6. Data is objective
- Riskier Assets/LOB get higher RBC Charges

Part c: 0.5 point

Based on the RBC ratio, the company would not be placed into receivership. However, the RBC system is not the only tool to trigger receivership. A factor that a regulator may consider is: (sample from list below)

1. Impairment, insolvency, or hazardous financial condition (including review of IRIS Ratios or Fast Track Ratios, liabilities greater than assets);
2. Improperly disposed property or concealed, altered, or destroyed financial books;
3. Best interest of policyholders, creditors or the public;
4. Dishonest, improperly experienced, or incapable person in control; or
5. Fraud by company

Part d: 0.5 point

The following provide examples of responses having the necessary components to demonstrate knowledge of the topic and obtain full credit; any two of the following received full credit:

- Higher cost to regulators, including additional resources, time to review, black box/transparency
- Less comparability of results/lack of consistency across companies
- Possible misuse/manipulation/artificially lowering capital requirements unintentionally or intentionally
- Introduction of potential for competitive advantages (large companies have more resources to create models than smaller companies)

EXAMINER'S REPORT (BY PART, AS APPLICABLE)

Candidates were expected to know details about the RBC system and its application. Candidates did not perform well on this question overall:

- The candidate was expected to know the components of the RBC system, but many confused this with components of the RBC formula. This was addressed in part a.
- Candidates also confused aspects of the RBC system that make it a reliable tool with the components of the RBC system. For instance, many answered the question stating that it provided action levels for regulators, which we believe to be more of an outcome of system. Some simply stated that it was conservative, which is a characteristic but does not explain why it is reliable. It is reliable because it considers material risks of the insurer, risks that are unique to the specific insurer, the charges vary by the degree of riskiness, and the methodology is standard across all insurer utilizing verifiable/audited data

The question is challenging. This particularly true on part c where a candidate needed to note other factors that a regulator would need to consider before placing an insurer under receivership.

Part a

- Candidate were expected to know the 2 main components of the RBC system, which are the RBC formula and RBC Model Law.
- To get full credit, a candidate needed to state both of these items and note that the RBC formula calculated the minimum required capital and the RBC Model Law grants authority to regulators to intervene if the RBC ratio reaches certain thresholds.
- Common errors included:
    1. Candidates confused RBC system components with the components of RBC formula.
    2. Candidates provided definition of the RBC ratio and not the RBC formula.

Part b

- To get full credit, a candidate was expected to be able to state something about the data being used (e.g. standardize, from the annual statement, Audited). We were also expecting candidates to comment on how the formula considers material risk to the company or unique risk of the company
- Common errors included:
    1. Stating that it provides action levels for the regulators
    2. Stating that it is conservative without any explanation about charges varying by the riskiness of the assets.
    3. Two answers about the data being verifiable(e.g., Data comes from the Annual Statement. The Annual Statement data is audited)

Part c

- The candidate was expected to know what RBC ratio triggers regulator intervention and also what other factors could trigger intervention.
- To get full credit, a candidate needed to state that regulators would not have to intervene with the given RBC ratio and also state a condition where the insurer could be placed in receivership.
- Common errors were candidates only noting that the RBC ratio would indicate no regulator intervention and, candidates not giving another condition where a company could be placed

into receivership.

Part d

- The candidate was expected to be able to describe two regulatory concerns about moving to internal models. Candidates performed very well on this question.
- To get full credit we were looking for commentary on two of the following broad categories:
    1. Higher Cost/Additional Resource
    2. Comparability
    3. Misuse
    4. Competitive Advantages

A common error was a candidate giving two responses from a single category above. We granted credit for only one of the responses in this case.

QUESTION 20

TOTAL POINT VALUE: 3 | **LEARNING OBJECTIVE: C3**

SAMPLE ANSWERS (BY PART, AS APPLICABLE)

Part a: 1.5 points

The following provides sample answers that received full credit for each of premium revenues and commission and brokerage expenses, for each of GAAP, SAP, and IFRS:

- Premium Revenues
  - GAAP
    - Recognized proportional to coverage provided over length of policy
    - As earned over duration/life of policy
    - UPR set up to recognize premium over life of policy
  - SAP
    - Recognized proportional to coverage provided over length of policy
    - As earned over duration/life of policy
    - UPR set up to recognize premium over life of policy
  - IFRS
    - Net Present Value of premiums recognized when contract entered into
- Commission and Brokerage Expenses
  - GAAP
    - Recognized proportional to coverage provided over length of policy
    - Recognized as premiums are earned
    - DAC asset set up and recognized over life of policy
  - SAP
    - Recognized immediately
    - Recognized at policy effective date
  - IFRS
    - Net Present Value of expenses recognized when contract entered into
    - Recognized immediately
    - Recognized at policy effective date

Part b: 1 point

The following provides sample answers that received full credit for each of premium revenues and commission and brokerage expenses, for each of GAAP Income Statement, SAP Income Statement, short-term profit and long-term profit. Only one response for each item was required.

- GAAP Income Statement
  - More volatile as a result of accelerated recognition of premiums, losses, and expenses
  - Premium recognition accelerated
  - Loss and Loss Adjustment Expense recognition accelerated
  - Commission and Brokerage Expense recognition accelerated
- SAP Income Statement
  - More volatile as a result of accelerated recognition of premiums, losses, and loss adjustment expenses
  - Premium recognition accelerated
  - Losses and loss adjustment expense recognition accelerated
  - Possibly very little change if regulators reject IFRS principles
- Short Term Profit

- Short Term Profit becomes more volatile as premiums are no longer recognized smoothly over coverage period (particularly if business is written around seasonal effective dates)
- Short Term Profit increases as the revenue and expense components of profit are recognized immediately
- Short Term Profit Increases since there is no longer a UPR and revenues are recognized sooner
- Short Term Profit increases as Loss and ALAE reserves are discounted
- Short Term Profit decreases as losses and acquisition expenses are recognized sooner
- Short Term Profit decreases as a risk margin is introduced to loss reserves
- Short Term Profit decreases due to cost of implementing change to IFRS

- Long Term Profit
  - Remains unchanged
  - Remains unchanged as only timing of recognition is impacted
  - Potentially higher as it may lower costs for companies operating internationally under multiple accounting standards

Part c: 0.5 point

The following provide examples of responses having the necessary components to demonstrate knowledge of the topic and obtain full credit; any two of the following received full credit:

- Easier to manipulate since principle based.
- Concerns about transition costs and costs of administration.
- Complexity of reserve calculations (exit values)
- Discounting short-term contracts would have an immaterial effect and could introduce more uncertainty.
- Need to re-evaluate evaluation metrics in light of new accounting standards.
- IFRS not established from a solvency perspective
- IFRS not as conservative as SAP
- More difficult to compare different insurers who may use different assumptions.
- Change in assumptions can cause large one-time shift in financial statements that can make comparison across time periods difficult.
- Use of fair value in reserve calculations can cause fluctuations within an insurer's financial statements that are inconsistent with the insurance business model

EXAMINER'S REPORT (BY PART, AS APPLICABLE)

Candidates were expected to know the basic principles underlying GAAP, SAP, and IFRS accounting standards with a particular focus on the recognition principles underlying each accounting standard and their impact on the income statement. Additionally candidates were expected to know how a change in accounting methods to IFRS might be viewed by regulators.

Candidates generally scored well on this question as almost every candidate who provided an answer received at least some partial credit.

Candidates did very well on Part a. Candidates generally did very well on the SAP and GAAP recognition of premium revenue and commission/brokerage expense but some candidates did not do as well on the IFRS recognition principles. The most common mistake was failing to recognize

Net Present Value or Fair Value principles in IFRS premium recognition.

Candidates also did very well on part b. There were a wide variety of reasons for deductions in this section but most fell into the category of not understanding the recognition principles under IFRS.

Candidates did not do quite as well on part c. The most common mistake was citing regulatory concern over volatility in earnings arising from accelerated recognition of revenue/expenses. Answers citing volatility as a regulatory concern only received full credit if they also cited the volatility arising from changes in discounted reserve values arising from interest rate changes or fair value changes.

Part a

Candidates were expected to know how premium revenue and commission and brokerage expense are recognized under each accounting standard. To obtain full credit, the candidates were expected to accurately and fully address how premium revenues and commission and brokerage were recognized under each accounting standard.

For premium revenues, GAAP and SAP answers that demonstrated understanding that premium was earned over the course of the policy term were given full credit. For IFRS, answers that demonstrated understanding that premium was recognized at present value as soon as the contract was entered into and not recognized over time were given full credit.

For commission and brokerage expenses, GAAP answers that demonstrated understanding that these expenses were recognized over the course of the policy term were given full credit. For SAP, answers that demonstrated understanding that expenses were recognized in full at policy inception were given full credit. For IFRS answers that demonstrated understanding that expenses were recognized as soon as contract was entered into were given full credit.

Common errors made by candidates included:

- Failing to incorporate present value concepts into their answer for IFRS premium recognition
- Failing to understand when expenses were recognized over the life of the policy versus when they were recognized up front under the different accounting standards
- Answering that premium and expense recognition under IFRS was similar to GAAP
- Giving answers that implied premium is recognized as revenue as premium payments are received (cash basis)
- Giving answers that implied expenses are only recognized as expenses were paid out (cash basis)
- Giving answers that focused exclusively on the balance sheet treatment (UPR and DAC) rather than how premiums and losses were recognized in the income statement

Part b

Candidates were expected to know how the adoption of IFRS by publically traded US insurers would impact the GAAP and SAP income statements. They were also expected to explain how this

would affect the reported profits in the short-term and long-term.

Credit was given for a wide range of answers on the first three sub-parts of this question (GAAP Income Statement, SAP Income Statement, and Short-Term Profit) as some of the subparts in this question could be interpreted more than one way.

For the GAAP and SAP Income statement sub-parts, credit was given for a wide range of answers. Some candidates answered the question by providing an inventory of how the various lines items of the income statement would change if IFRS replaced the existing accounting standard. These answers were given full credit so long as the changes described were an accurate interpretation of the changes arising out of the adoption of IFRS. For example an answer that "revenue would increase due to accelerated recognition of premium" was given full credit, but an answer such as "expenses would be spread over the policy term under IFRS" would not be given any credit. Other candidates answered the GAAP and SAP income statement sub-parts by giving a directional answer as to what would happen to net income (increase or decrease) after a change to IFRS. These answers were given full credit so long as rationale citing differences in recognition principles under IFRS supported the answer both in the technical nature of the accounting change as well as its directional impact on net income. For example, an answer that "GAAP Income would increase due to accelerated recognition of premium" would be given full credit as premium recognition is accelerated relative to GAAP under IFRS, but an answer of "SAP Income would decrease due to the discounting of loss and loss adjustment expenses" would not be given credit as discounting of loss and loss adjustment expenses should increase net income.

Additionally, some candidates did not take as a given that the SAP income statement would necessarily change if a publically traded insurer adopted IFRS, citing the ability of regulators to accept/reject various aspects of GAAP accounting today for use in SAP and asserting a similar approach may be used for IFRS if adopted by insurers for financial reporting. Candidates asserting that regulators might not adopt IFRS principles and concluding that the SAP income statement might not change were also given full credit.

For Short-Term profit, since the question did not specify whether the change was measured relative to previous SAP or GAAP profit, credit was given for any answer (increase or decrease) that provided an explanation that could be supported by citing a change in treatment of an income statement item under IFRS. Answers citing that short-term profit would become more volatile/erratic/etc… were also given full credit, even without further explanation. Answers that concluded short-term profit would decrease due to the implementation costs of transitioning to a new accounting standard were also given full credit.

Common errors candidates made were not understanding the changes in IFRS versus GAAP or SAP and providing answers not supported by the change to IFRS such as failing to understand the changes in how premium revenue is recognized. In other cases candidates provided conclusions that were potentially correct but cited supporting evidence that would have actually supported the opposite conclusion. For example, an answer for short-term profit that stated "short-term profit will decrease as additional premium revenue is recognized sooner" would be marked incorrect.

For long-term profit, answers that indicated that long-term profits would not change as all differences in the accounting standards only arise out of the timing of recognition were given full credit. Credit was also given for answers that indicated it may be easier for insurers to operate in multiple countries or support fewer accounting standards, leading to greater long term profits.

Part c

Candidates were expected to be able to briefly describe concerns regulators may have if IFRS replaced SAP.

Candidates receiving full credit on this question were able to cite concerns regulators may have that were supported in the syllabus materials.

The most common incorrect answers on this question cited volatility in earnings arising out of accelerated recognition of premiums and losses. These answers were not given credit. However, answers citing volatility arising from changes in fair value of loss and ALAE reserves arising from changes in discount rates for estimating present values were given credit.

QUESTION 21

TOTAL POINT VALUE: 2.75	**LEARNING OBJECTIVE: D1**

SAMPLE ANSWERS (BY PART, AS APPLICABLE)

Part a: 0.75 point

The following provide examples of responses having the necessary components to demonstrate knowledge of the topic and obtain full credit:

- 1) that the assumptions were promulgated by the state insurance department
  2) what these assumptions are
  3) that the report was completed in accordance with these promulgated assumptions
- 1) state law
  2) assumptions required by the state law
  3) statement that the report has been prepared in accordance with the state law
- 1) the assumptions mandated by the relevant regulation
  2) the regulation itself
  3) that the report was prepared in accordance with the relevant regulation
- 1) the law used
  2) the assumption prescribed by the law
  3) the calculation is according to the assumption required by law

Part b: 0.5 point

The following provide examples of responses having the necessary components to demonstrate knowledge of the topic and obtain full credit:

- Make the require disclosures in a cover letter with needed exhibits and ask that to be always distributed together with Actuarial Report
- The actuary could attach a document to the report stating the disclosures in part a
- The actuary should attach a cover letter to the report to disclose the necessary disclosures
- Prepare a separate written communication making disclosures attached to the report

Part c: 1.5 point

The following provide examples of responses having the necessary components to demonstrate knowledge of the topic and obtain full credit; any six of the following received full credit:

- Name of actuary
- Subject of report
- Include any supporting documents
- Disclose intended users
- Disclose intended use/function/purpose
- Qualifications
- Any inherent risks/cautions to take with report
- Materiality standard
- Any limitations
- Conflict of interest
- If the actuary relied on the work of another actuary
- Date
- Subsequent events
- Relationship with the company
- Assumptions and methodologies used

- Material changes from prior
- Version number
- Any deviations from ASOPs

EXAMINER'S REPORT (BY PART, AS APPLICABLE)

Part a

Most candidates listed either zero or one of the three required items. Many candidates did not recognize that this part of the question was looking for the list in Section 4.2 of ASOP 41. They instead listed disclosures that would have received credit for part c (from section 4.1.3). This question was very specific in requiring disclosures needed if the assumptions used were required by state law, so only the items in Section 4.2 were considered for credit. Another common mistake was stating that the actuary should disclose whether they agree with the required assumptions.

Part b

Candidates performed poorly on this part of the question with most candidates receiving no credit. Very few candidates recognized that this part of the question was looking for how the information should be disclosed. Many candidates only stated that the actuary should disclose that the report is in a prescribed form that doesn't accommodate the disclosures required in part a.

Part c

Candidates performed well on this part with the majority of candidates receiving credit for either five or six disclosures. The candidate was expected to recognize that this question was looking for the disclosures listed in Section 4.1.3 of the ASOP, but credit was given for items listed throughout ASOP 41. Again, candidates that performed poorly did not recognize the lists that the question was intended to address. Some candidates listed specific items about the data or the analysis such as

- Unusual IRIS ratios
- Gross or net of subrogation
- Gross or net of reinsurance
- Discounting used and/or at what rate
- Pooling arrangements
- Asbestos or mass tort exposures
- Compliance with ASOP
- Booked/estimated reserves
- Reinsurance collectability

QUESTION 22

TOTAL POINT VALUE: 2.5 | **LEARNING OBJECTIVE: D1**

SAMPLE ANSWERS (BY PART, AS APPLICABLE)

Part a: 1 point

The following provides examples of responses having the necessary components to demonstrate knowledge of the topic and obtain full credit; any two of the following received full credit (but responses could not simply be a different percentage of same metric):

- 2.5%, 3%, 5%, 10%, 15%, 20% or 25% of policyholder surplus
- 3% 5%, 10%, 15% or 20% of carried reserves
- $3,000,000
- 12,667,000

The following provides examples of responses having the necessary components to demonstrate knowledge of the topic and obtain full credit;

- If standard was based policyholder surplus: 1) Intended users are regulators looking at financial health/solvency; OR 2) would trigger an exceptional value of an IRIS ratio
- If standard was based on reserves: 1) Would cause a change in opinion/reserves to be outside reasonable range; OR 2) would cause management to make different decisions; OR 3) would trigger an exceptional value of an IRIS ratio; OR 4) would reduce surplus by an amount that could affect solvency; OR 5) as this is the value we are estimating, a percentage of the metric is reasonable/use % of reserves since the opinion in on reserves.
- $3,000,000: Would cause a change to reserve opinion/reserves would be outside of reasonable range
- $12,667,000: Would cause an exceptional value of IRIS ratio 2

Part b: 0.5 point

Candidate needed to show whether the carried reserves plus the materiality standard fell inside or outside of the actuary's range of reserve estimates.

- Option 1: (Candidate assesses RMAD under both standards) For $2.3 million (10% of reserves), $23 + $2.3 = $25.3 < $26, so there is a risk of material adverse deviation. For $3.1 million (10% of surplus), $23 + $3.1 > $26, so there's no risk of material adverse deviation.
- Option 2: (Candidate selects standard with justification and assess RMAD) Select $2.3 million (10% of reserves) as standard because it's lower than 10% of policyholder surplus. $23 million + $2.3 million = $25.3 million, in actuary's range ($20 million to $26 million) so there is risk of material adverse

Part c: 0.5 point

The following provides examples of responses having the necessary components to demonstrate knowledge of the topic and obtain full credit; any two of the following received full credit:

- Change in surplus to trigger next RBC action level
- Change in surplus which results in a change in financial/investment rating
- Change in capital that would cause company's capital to fall below the state's minimum required level
- A change in reserves that would cause an exceptional value for an IRIS ratio
- % of net income
- Multiple(s) of net retained risk

Part d: 0.5 point

The following provides examples of responses having the necessary components to demonstrate knowledge of the topic and obtain full credit; any two of the following received full credit:

- Asbestos/environmental reserves/exposure (cannot get credit for both)
- Reinsurance collectability
- Catastrophe exposure/concentration of property exposure in Florida
- Mass tort claims
- Construction defect exposure
- Long-tailed lines (workers compensation, medical malpractice)
- Operational change; change in claims handling or reserving process
- Latent risk in products liability
- Medical malpractice legislative issues
- Impact of law change/tort reform
- Pools and associations
- Unknown/uncertain development patterns
- Unearned premium reserves for long duration contracts
- Exposure to claims-made extended reporting
- High excess layers
- Significant growth; rapid premium growth
- Terrorism exposures
- Workers compensation large deductibles
- Lack of data
- Risky investment strategy
- New line of business
- Mortgage defaults exposure
- Chinese drywall claims
- Changes in methods/assumptions; sensitivity of assumptions to estimate
- Class action lawsuit
- Discount rate used to discount reserves
- Change in mix of business

EXAMINER'S REPORT (BY PART, AS APPLICABLE)

The candidate was expected to know appropriate materiality standards and how to assess the risk of material adverse deviation in the context of a Statement of Actuarial Opinion for a given materiality standard, carried reserves and the range of reserve estimates. Candidates generally scored well on this question. There were two interpretations of part b. which were considered in the grading. The most difficult part was part c. asking for alternate materiality standards based on information other than that provided in the stem of the question.

Part a

The candidate was expected to know appropriate materiality standards in the context of assessing material adverse deviation in the Statement of Actuarial Opinion. To receive full credit, the candidate needed to calculate two different materiality standards and provide a justification on why it was appropriate to use. The justification needed to address the implications of the chosen materiality standard to receive credit. For example, if 10% of surplus was chosen as the materiality standard, simply saying that 10% is a "significant portion of surplus" was not sufficient

to receive credit. Saying that a 10% reduction of surplus would impact the perceived solvency or financial well-being of the company, IRIS ratios, or regulatory oversight concerns did receive credit. Credit was given for valid justifications despite a calculation error or indeterminable from the information provided. Common errors: candidate did not provide any justification for his/her materiality standards. No credit was given for a % of premium or % of the actuarial central estimate, as these are not to address the risk of material adverse deviation in the Company's reserves. If the same justification was given for both materiality standards, then credit was only given once.

Part b

The candidate was expected to know that when the carried reserves plus the materiality standard are within the actuary's range, a risk of material adverse deviation exists AND when the carried reserve plus the materiality standard are outside of the actuary's range, a risk of material adverse deviation does not exist. Full credit was given two different ways, depending on how the candidate interpreted the question. Option 1: The candidate correctly assessed RMAD for each materiality standard from part a; Option 2: The candidate selected a materiality standard from part a., provided justification for the selection, and correctly assessed RMAD. Common errors: (1) saying that RMAD exists when the carried plus the materiality standard fall outside of the actuary's range; (2) using the actuary's point estimate + materiality standard rather than carried + materiality standard.

Candidates could receive full credit for b without receving full credit for a.

Part c

The candidate was expected to know additional materiality standards (other than the reserves or surplus provided in the question). Full credit was given for explaining how to determine the materiality standard. Common errors: providing less than 2 items; % of premium (written or earned) was not accepted since the materiality standard is used for purposes of addressing the risk of material adverse deviation in the loss reserve opinion. . No credit was given for a different % of same metric as part a. since it is presumed that one % would be preferable over the other.

Part d

The candidate was expected to know 2 risk factors that might contribute to a risk of material adverse deviation in a Statement of Actuarial Opinion. Full credit was given for 2 items that might be discussed in the RMAD relevant comments section. Common errors: providing less than 2 items. Full credit was not given for asbestos exposure and environmental exposure as this was considered a single item. No credit was given for generic items like inflation, trends, or changes in company management without explaining their applicability; generic items or changes in management aren't clearly linked to specific risk of the company relative to the loss reserves.

QUESTION 23	
TOTAL POINT VALUE: 2.5	**LEARNING OBJECTIVE: D1**
SAMPLE ANSWERS (BY PART, AS APPLICABLE)	
Part a: 0.25 point	
Relevant Comments	
Part b: 0.75 point	
Identification, Scope, Opinion	
Part c: 1.5 point	
IRIS ratio 13 threshold is 25%, not 20%. Definition of long duration contract is incorrect. Should be "13 months or greater" The appointed actuary should provide commentary as to what factors are causing the exceptional IRIS ratio 13 value.	
EXAMINER'S REPORT (BY PART, AS APPLICABLE)	
{Candidates generally performed well on this question. Candidates were expected to know the four sections of the SAO as well as specific items included in the Relevant Comments section. Most candidates scored well on parts a and b with many candidates getting full credit. Many candidates had trouble identifying all three errors/omissions in part c with most candidates getting partial credit on this part. The omission from the paragraph was generally harder for candidates to catch than the two errors were.	
Part a	
• Candidate expected to correctly identify the section of the SAO (Relevant Comments) • Candidate expected to state "Relevant Comments" for full credit • Most candidates received full credit on this subpart. • Common errors that did not receive credit included "Comments" instead of "Relevant Comments" or identifying one of the other three SAO sections (Identification, Scope, Opinion)	
Part b	
• Candidate expected to correctly identify the remaining three sections of the SAO for full credit (Identification, Scope, Opinion) • Candidates did receive credit for listing "Relevant Comments" in part b. if they incorrectly identified the section in part a. (that is, they did not respond to part a. with "Relevant Comments" • Common errors included: o "Introduction" instead of "Identification" o Listing "Exhibit B" as a section of the SAO o Listing three items included in the Relevant Comment section (e.g. risk of material adverse deviation, reinsurance, methods & assumptions, etc.) rather than listing the other three sections of the SAO	
Part c	
• Candidates were generally able to identify and correct the two errors (IRIS threshold (25% instead of 20%) and long duration contract length (13 months instead of 12 months)) but many candidates struggled with identifying the omission and instead tried to find a third error. • Common incorrect "errors" that were identified included: o Confusing the three types of policies excluded from long duration contracts	

(financial guaranty contracts, mortgage guaranty policies, surety contracts) with types of insurers that are exempt from the RBC procedure (title insurance companies, monoline financial guaranty insurance companies, monoline mortgage guaranty insurance companies). Specifically saying the "surety contracts should be title insurance".
    - Saying the three types of policies excluded from long duration contracts should not be excluded
    - Saying the values of IRIS 11 and 12 must be disclosed as well
    - Thinking that "exceptional value" is incorrect wording and "unusual value" should be used instead for the IRIS tests
    - Saying that the error was not specifying one year development to "prior" surplus and two year development to "second prior" surplus (candidate assumes the surplus mentioned in the question is current surplus)
    - Saying you need to specify that long duration contracts are not subject to premium increases "during the policy term"
    - Identifying "non-cancellable" and "not subject to premium increases" as errors that should not be negative and correcting with "cancellable" and "subject to premium increases"
- Common incorrect omission that was identified:
    - Saying the actuary needs to disclose the name of the member of company management who said the company does not write long duration contracts as well as their role at the company. This does not need to be included in the Relevant Comments section.

QUESTION 24

TOTAL POINT VALUE: 3 | **LEARNING OBJECTIVE: D1**

SAMPLE ANSWERS (BY PART, AS APPLICABLE)

Item	Statement of Actuarial Opinion (SAO)	Actuarial Opinion Summary (AOS)
Filing deadline	Filed by March 1	Filed by March 15.
Confidentiality	Public document	Confidential document
Parties with whom each is required to be filed	Company's state of domicile & NAIC Company's state of domicile & annual statement Company's state of domicile & yellow book All states where writing business/licensed	Company's state of domicile Regulator of state of domicile
Relevant comments with respect to adverse development in loss and DCC reserves over a one-year period.	Disclose unusual values for IRIS Ratios 11, 12, or 13. Must mention IRIS ratios.	If 1-year development in excess of 5% of surplus in 3 or more of last 5 years, need to explain cause
Appointed Actuary's unpaid claim estimate	Not included	Includes a point and/or range of reserve estimates (whichever is/are calculated)
Assessment of whether there are significant risks and uncertainties that could result in material adverse deviation	Includes basis of materiality standard, why chosen and whether risk of material adverse deviation exists Is discussed Included Yes	Not discussed No N/A

EXAMINER'S REPORT (BY PART, AS APPLICABLE)

- Candidates were expected to know the filing requirements and details for the Statement of

Actuarial Opinion (SAO) and Actuarial Opinion Summary (AOS).

- Candidates did particularly well on Confidentiality, Actuary's unpaid claim estimate for the AOS, and Risk of material adverse deviation for the SAO.
- Candidates did poorly on the deadline for the AOS, with whom the AOS is filed, and when one-year development needs to be discussed on the AOS.

QUESTION 25

TOTAL POINT VALUE: 6.25 | **LEARNING OBJECTIVE: C2/E1**

SAMPLE ANSWERS (BY PART, AS APPLICABLE)

Part a: 0.75 point

- Option 1: Loss = (.6 × $100M – $20M)/$20M = 200% and probability of loss = 15%;
- Option 2: Loss = (.25 × $15M – $1M)/$1M = 275% and probability of loss = 2%;
- Option 3: Loss = (1.0 × $2M – $1.2M)/$1.2M 66.67% and probability of loss = 1%;

As shown above:
Pass: Option 1 has a 10% chance of a 10% or greater loss,
Fail: Options 2 & 3 do not have a 10% chance of loss, fail.

Part b: 1.5 points

Sample answer 1:

- Option 1: ERD = $[(0.6 \times 100{,}000{,}000/1.03^{1.5} - 20{,}000{,}000) \times 0.15]/20{,}000{,}000 = 28.05\% > 1\%$, Pass ERD
- Option 2: ERD = $[(0.25 \times 15{,}000{,}000/1.03^{1.5} - 1{,}000{,}000) \times 0.02]/1{,}000{,}000 = 28.05\% > 5.17\%$, Pass ERD
- Option 3: Substantially all of risk is transferred, so meets risk transfer.

Sample answer 2:

- Option 1: ERD = $[(0.6 \times 100{,}000{,}000/1.03^{1.5} - 20{,}000{,}000) \times 0.15]/20{,}000{,}000 = 28.05\% > 1\%$, Pass ERD
- Option 2: ERD = $[(0.25 \times 15{,}000{,}000/1.03^{1.5} - 1{,}000{,}000) \times 0.02]/1{,}000{,}000 = 5.17\% > 1\%$, Pass ERD
- Option 3: ERD = $[(1.00 \times 2{,}000{,}000/1.03^{1.5} - 1{,}200{,}000) \times 0.01]/1{,}200{,}000 = 0.6\% < 1\%$, Fail ERD

Part c: 4 points

Assuming a hurricane and treaty in 2013
Premium = 20M
Gross loss incurred = 100M Ceded = 60% × 100M = 60M, retained = 40M
PHS = 130M – 20M – 40M = 70M
Reinsurance Recov = 30M + 60M = 90M
R_3 = 2M + 0.5 × 0.1 × 90M = 6.5M
R_4: new reserve = 170M + 40M = 210M

((1 + 20%) × 0.95 – 1) × 210M = 0.14 × 210M = 29.4M
R_4 = 29.4M + 0.5 × 0.1 × 90M = 33.9M

R_5: Net WP = 200M – 20M = 180M
R_5 = ((1 + 25%) × 0.90 – 1) × 180M = 22.5M

Adjust R_1 to account for selling of Class 4 bond (0.045 RBC charge)
R_1 = 6 – 0.045 × 20M = 5.1M

So R_0 = 11M adj. PHS = 70M
R_1 = 5.1M
R_2 = 5M
R_3 = 6.5M
R_4 = 33.9M
R_5 = 22.5M

$RBC = R\_0 + (R\_1 + R\_2 + R\_3 + R\_4 + R\_5)^{0.5}$
$= 11 + (5.1 + 5 + 6.5 + 33.9 + 22.5)^{0.5}$
$= 52.8M$
$ACL = 0.5 \times 52.8 = 26.4$

RBC Ratio = (Adj. PHS/ACL) = 70/26.4 = 2.65

EXAMINER'S REPORT (BY PART, AS APPLICABLE)

General Overview

The candidate was expected to know how to apply the 10/10 rule when determining whether a contract should be accounted for as reinsurance. In addition to the 10/10 rule, they were required to use other justification (i.e. Expected Reinsurer Deficit). The last part of the question dealt with calculating a RBC Ratio. The candidate was expected to know the adjustments that needed to be made to each of the RBC components when adding the Hurricane reinsurance contract to the insurer's current book of business.

Overall, the question was a very difficult one in that it involved multiple calculations and required the candidate to know the formulas and percentages that were needed when calculating the RBC formula and ratio.

There was a lot of confusion around the calculation of R5 because an UW Expense Ratio was not given in the problem. The missing information implicitly resulted in an increase in the Blooms level for this question, requiring candidates to think about how to handle the missing assumption. In recognition of this, multiple responses were considered for full credit. Please see the Part (c) subsection below for each of the solutions that were considered.

Part a

- The candidate was expected to know how to apply the 10/10 rule to see if a reinsurance contract would be eligible to be treated as reinsurance under accounting rules.
- The candidate was expected to apply the 10/10 rule to each contract and state whether or not the contact passed.

- Candidates generally scored well in this section and either knew the 10/10 rule or left the section blank. A few candidates did respond to the question without applying the 10/10 rule.

Part b

- The candidate was expected to know how to determine if a reinsurance contract would be eligible to be treated as reinsurance under accounting rules without using the 10/10 rule
- The question did not tell the candidates how to determine the accounting treatment and left it up to them.
- A large majority of candidates chose to use the Expected Reinsurer Deficit method to determine whether the contract was eligible to be treated as reinsurance. In many cases the candidate failed to take into account discounting, did not subtract the premium within the calculation, or did not use the correct calculation altogether.
- Some candidates answered using underwriting and timing risk and stating if they applied to each of the contracts, but did not justify their answers.
- This part of the question was challenging for the candidates.

Part c

- The candidate was expected to know how to adjust the RBC calculation for an insurance company for an additional reinsurance contract purchased and a reinsured event happening
- The question was very challenging, in particular because no expense ratio was given. This was accounted for in the grading of R_5 by accepting the following calculations

  Approach A (no expense ratio assumption, 1+loss and ALAE ratio)
  Revised R5=Net Premium × [(1+Comp RBC Loss & ALAE %) × Adj Inv Inc – 1]

  Approach B (with expense ratio assumption, 1+loss and ALAE ratio)
  Revised R5=Net Premium × {[(1+Comp RBC Loss & ALAE %) × Adj Inv Inc]+UW Exp Ratio – 1}

  Approach C (no expense ratio assumption, loss & ALAE Ratio)
  Revised R5=Net Premium × [(Comp RBC loss & ALAE %) × Adj Inv Inc – 1]

  Approach D (with expense ratio assumption, loss & ALAE Ratio)
  Revised R5=Net Premium × {[(Comp RBC loss & ALAE %) × Adj Inv Inc]+UW Exp Ratio – 1}

- Common areas where candidates had issues includes:
  - Remembering the correct RBC charge for class 4 bonds,
  - Determining the credit risk adjustment to the revised R_3 and R_4,
  - Using the wrong reserves in the R_4 calculation,
  - Using the wrong net written premium in the R_5 calculation,
  - Not adjusting the policyholder surplus for the cost of the reinsurance or the benefit of the reinsurance recoveries.

QUESTION 26

TOTAL POINT VALUE: 3 | **LEARNING OBJECTIVE: E1**

SAMPLE ANSWERS (BY PART, AS APPLICABLE)

Part a: 0.5 point

The following provides examples of responses having the necessary components to demonstrate knowledge of the topic and obtain full credit; any two of the following received full credit:

- Concerns about reinsurer solvency/financial condition
- Primary insurer wishes to exit a line of business
- Troubled relationship with reinsurer (disputes about claims or contract provisions)
- Insurer/Reinsurer have different ideas about future loss development
- Accelerated settlement of the obligation
- Improvement in current 'wealth' based on perception of cash vs. non-cash assets
- Cash flow for investment or liquidity purposes
- A certain immediate amount is substituted for an uncertain future amount
- Administrative cost savings associated with monitoring/collection
- Tax considerations
- Desire to reduce provision for reinsurance

Part b: 1.5 points

Sample 1:
Received 600 (8,000 – 7,400), Increase surplus
Assumed 600 + 400 = 1m in reserves, Reduce surplus
Taxable income reduced (1m)×(0.85) = 850
Taxable income increased 600 from consideration received

Reduced 850 from reserves
250 reduction
× 0.35 tax rate
87.5 tax reduction

Surplus increase from cash received: 600
Surplus reduced from reserves assumed: 1,000
Surplus increased for tax reduction: 87.5
312.5k reduction in surplus

Sample 2:
Net Incurred Loss before commutation = 12m
Net incurred Loss after commutation = 12.4m

Net taxable incurred loss before commutation = 8 + (2.4 + 1.6)×0.85 = 11.4
Net taxable incurred loss after commutation = 7.4 + (3 + 2)×0.85 = 11.65

Income tax before commutation = -11.4 × 0.35 = -3.99
Income tax after commutation = -11.65 × 0.35 = -4.0775

Surplus before commutation = 12 – 3.99 = 8.01
Surplus after commutation = 12.4 – 4.0775 = 8.3225

Change in surplus = 8.01 – 8.3225 = **-0.3125**

Part c: 1 point

The following provides examples of responses having the necessary components to demonstrate knowledge of the topic and obtain full credit; any one of the following for each of the primary insurer and reinsurer received full credit:

Insurer:

- Net incurred loss triangles (Sch P, Part 2) will show upward development
- Net paid loss triangles (Sch P, Part 3) will show downward development
- Net (bulk & IBNR) reserves (Sch P, Part 4) will show upward development

Reinsurer:

- Net incurred loss triangles (Sch P, Part 2) will show downward development
- Net paid loss triangles (Sch P, Part 3) will show upward development
- Net (bulk & IBNR) reserves (Sch P, Part 4) will show downward development
- Claim closure rates (Sch P, Part 5) commuted claims will be considered closed

EXAMINER'S REPORT (BY PART, AS APPLICABLE)

- Candidates were expected to know the motivations behind a commutation (from the perspective of the insurer), how to calculate post-tax/discounted changes in surplus resulting from a commutation and how the commutation would impact both the insurer's and reinsurer's Schedule P.
- Candidates generally did very well on parts a. and c. and performed poorly on part b., specifically the calculation of the reserve discount and the impact of taxes.

Part a

- A broad array of answers was accepted (including those from both the Klann and Steeneck papers) for part a., and candidates generally did very well.
- Credit was not given for simple references to insurers 'profiting' from the transaction or the insurer wanting to get rid of the contract with no reasons specified.

Part b

- This question was challenging to candidates. Candidates were required to calculate the price of the commutation, the income change related to the commutation (using the discounted reserves), the tax change and ultimately the change in surplus net of tax effects.
- Candidates generally did well in calculating the price of the commutation and the pre-tax change in surplus.

- The most common mistakes included ignoring the effect of taxes, applying the tax rate to the surplus (instead of the income) and taking the tax impact as the final answer. Another common error was having the wrong sign for the surplus and/or commutation payment.
- Whenever possible, partial credit was given for various interim calculations if they were accurate and labeled properly. In many cases, candidates were not labeling their work, making calculations difficult to follow.

Part c

- Candidates generally did very well on part c.
- Some common errors were not including the direction of the distortion, not labeling which distortion applied to which party (insurer vs reinsurer) or treating the consideration as a distortion to premium.