

Exam 6US



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Exam 6-United States

Regulation and Financial Reporting (Nation Specific)

October 27, 2016

4 HOURS

INSTRUCTIONS TO CANDIDATES

1. This 73.5 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. For your Candidate ID number, four boxes are provided corresponding to one box for each digit in your Candidate ID number. If your Candidate ID number is fewer than 4 digits, begin in the first box and do not include leading zeroes. 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 specified number of items are requested, do not offer more items than requested. For example, if you are requested to provide three items, 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.

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.

CONTINUE TO NEXT PAGE OF INSTRUCTIONS

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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 November 10, 2016.

END OF INSTRUCTIONS

EXAM 6 – UNITED STATES, FALL 2016

1. (3.25 points)

a. (0.75 point)

Describe the circumstances of the Paul v. Virginia case, and briefly describe the decision of the U.S. Supreme Court.

b. (0.5 point)

Briefly describe the impact of the Sherman Anti-Trust Act, prior to the Southeast Underwriters Association (SEUA) decision, with respect to each of the following:

i. Federal oversight of insurance

ii. State oversight of insurance

c. (1 point)

Following the SEUA decision, the NAIC issued several recommendations and model laws. Describe one way in which these NAIC actions affected each of the following:

i. Insurance compacts

ii. State insurance regulation

d. (1 point)

Describe the Robinson-Patman Act and evaluate how individual price optimization might be in violation of this Act.

EXAM 6 – UNITED STATES, FALL 2016

2. (2.5 points)

An insurance company uses credit-based insurance scoring as part of its personal auto rating plan. A recent severe countrywide economic downturn is believed to be causing a lowering of credit-based insurance scores among consumers.

a. (0.5 point)

Describe one concern regulators may have regarding the response of the company's rating plan to the changes.

b. (1 point)

Briefly describe and justify two ways in which the pricing actuary could reflect the impact of the economic downturn on credit-based insurance scores in an upcoming rate filing.

c. (1 point)

To protect consumers against the possibility of large rate swings due to deteriorating credit-based insurance scores, the regulator requests that the insurer cap the renewal rate increase for each policyholder. Describe two ways this might violate the ratemaking principles outlined in the CAS "Statement of Principles Regarding Property and Casualty Insurance Ratemaking."

EXAM 6 – UNITED STATES, FALL 2016

3. (3.5 points)

a. (1 point)

Briefly describe four possible causes of insurer insolvency.

b. (0.5 point)

Describe how the bankruptcy process for insurers differs from the bankruptcy process for companies in other industries.

c. (1 point)

Describe one argument in favor of and one argument against more stringent solvency regulations for the insurance industry.

d. (1 point)

Describe the two main steps of the regulatory intervention process for an insurer that may be at risk of becoming insolvent.

EXAM 6 – UNITED STATES, FALL 2016

4. (2.5 points)

a. (0.75 point)

Briefly describe three areas of responsibility for the Federal Insurance Office, as established by the Dodd-Frank Act.

b. (0.75 point)

Briefly describe three restrictions on the authority of the Federal Insurance Office prescribed by the Dodd-Frank Act.

c. (1 point)

Provide one argument in favor of and one argument against the following statement: “The reforms outlined in the Dodd-Frank Act are beneficial to reinsurers.”

EXAM 6 – UNITED STATES, FALL 2016

5. (2.5 points)

Propose a new system of rate and solvency regulation for the U.S. insurance industry, commenting specifically on the role of the federal government and the role of the states. Describe two potential advantages and two potential disadvantages of this proposed regulatory system.

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EXAM 6 – UNITED STATES, FALL 2016

6. (3 points)

a. (0.75 point)

Briefly describe three reasons why terrorism may be considered an uninsurable risk.

b. (0.75 point)

Identify the three goals of the Terrorism Risk Insurance Act (TRIA) of 2002.

c. (1.5 points)

Discuss whether the Terrorism Risk Insurance Act (TRIA) of 2002 and its successor(s) have met each of the goals identified in part b. above.

EXAM 6 – UNITED STATES, FALL 2016

7. (3 points)

a. (1.5 points)

Other than residual markets, identify and briefly describe three levels of state government participation in providing workers compensation insurance.

b. (1.5 points)

For each level identified in part a. above, describe a benefit of that level of participation.

EXAM 6 – UNITED STATES, FALL 2016

8. (2.5 points)

a. (0.5 point)

Briefly describe two common characteristics of high-risk driver programs in the automobile insurance voluntary market.

b. (1 point)

Identify and fully describe one automobile insurance residual market program.

c. (0.5 point)

Describe the purpose of Fair Access to Insurance Requirements (FAIR) plans.

d. (0.5 point)

Briefly describe two types of exposures that are considered uninsurable under most FAIR plans.

EXAM 6 – UNITED STATES, FALL 2016

9. (2.5 points)

a. (1 point)

Two challenges facing the National Flood Insurance Program (NFIP) are finding ways to:

- i. Strengthen the financial sustainability of the NFIP
- ii. Improve the accuracy of flood risk assessment and mapping of hurricane and coastal storm hazard areas

For each of the challenges listed above, describe an issue a policymaker may face when addressing the challenge.

b. (1.5 points)

Describe three actions that the U.S. Congress could take to reduce real estate development in previously-flooded communities in high-risk flood zones.

EXAM 6 – UNITED STATES, FALL 2016

10. (4 points)

Given the following information from a commercial lines insurance company's 2014 and 2015 Annual Statements and Insurance Expense Exhibits (IEE) (all figures are in thousands of dollars):

	2014	2015
Net written premium	50,700	50,000
Net earned premium	49,500	48,600
Net unearned premium reserve	20,600	22,000
Net loss & LAE reserve	15,900	17,850
Ceded reinsurance premiums payable	200	1,200
Agents' balances	3,800	4,100
Policyholders' surplus	28,600	30,600
Net investment gain	6,275	5,025
Commissions & brokerage incurred	8,425	7,725
Taxes, licenses & fees incurred	1,000	960
Other acquisition expenses incurred	3,325	3,700
General expenses incurred	5,225	5,575

a. (1.75 points)

Calculate the net investment gain ratio for 2015.

b. (0.75 point)

Calculate the surplus ratio used to allocate surplus by line of business in the 2015 IEE.

c. (1.5 points)

Describe how a commercial lines insurance company's IEE might be used differently by each of the following stakeholders:

- i. Competitors
- ii. Rating Agencies
- iii. Policyholders

EXAM 6 – UNITED STATES, FALL 2016

11. (2.5 points)

Given the following excerpts from an insurance company’s 2015 Schedule P for a line of business:

Part 5, Section 1				
Cumulative Number of Claims Closed with Loss Payment Direct and Assumed at Year-End				
Year	2012	2013	2014	2015
2012	215	300	315	350
2013	XXX	225	335	375
2014	XXX	XXX	215	310
2015	XXX	XXX	XXX	175

Part 5, Section 2				
Number of Claims Outstanding Direct and Assumed at Year-End				
Year	2012	2013	2014	2015
2012	90	25	10	5
2013	XXX	95	25	20
2014	XXX	XXX	90	45
2015	XXX	XXX	XXX	90

Part 5, Section 3				
Cumulative Number of Claims Reported Direct and Assumed at Year-End				
Year	2012	2013	2014	2015
2012	460	520	515	510
2013	XXX	480	580	575
2014	XXX	XXX	460	500
2015	XXX	XXX	XXX	340

a. (1.25 points)

Construct a triangle showing the ratio of all closed claims to reported claims.

b. (0.75 point)

Identify one trend in the closure rates and briefly describe two possible causes for that trend.

c. (0.5 point)

Explain how the trend identified in part b. above could affect an actuary’s estimate of unpaid claims if not taken into consideration.

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EXAM 6 – UNITED STATES, FALL 2016

12. (2.5 points)

The following are excerpts from an insurance company’s 2014 Schedule P (all figures are in thousands of dollars):

Part 2K - Fidelity/Surety			
Incurred Net Losses & Defense and Cost Containment Expenses (DCC) at Year End			
Years in Which Losses Were Incurred	2012	2013	2014
Prior	250	500	550
2013	XXX	800	1,300
2014	XXX	XXX	1,000

Part 3K - Fidelity/Surety			
Cumulative Paid Loss & Defense and Cost Containment Expenses (DCC) at Year End			
Years in Which Losses Were Incurred	2012	2013	2014
Prior	0	450	475
2013	XXX	600	700
2014	XXX	XXX	400

The following 2015 paid and reserve information is provided for Fidelity/Surety (all figures are in thousands of dollars):

Years in Which Losses Were Incurred	Calendar Year 2015 Net Paid Loss & DCC	Unpaid Loss & DCC as of December 31, 2015
Prior	10	15
2013	30	35
2014	150	75
2015	625	300

Calculate the Prior Years row for the 2015 Schedule P, Part 2K.

EXAM 6 – UNITED STATES, FALL 2016

13. (3.75 points)

Using the following complete reinsurance information for an insurance company as of December 31, 2015 (all figures are in thousands of dollars):

Name of Reinsurer	Reinsurance Recoverable on Paid Losses and Paid Loss Adjustment Expenses					
	Current	1 to 29 Days	30 to 90 Days	91 to 120 Days	Over 120 Days	Total
Authorized - Other – U.S. Unaffiliated Insurers						
Reinsurer A	62	6	2	16	4	90
Unauthorized - Other – U.S. Insurers						
Reinsurer B	105	19	0	7	3	135

Name of Reinsurer	Total Recoverables	Letters of Credit	Amounts Received Prior 90 Days	Amounts in Dispute (included in Total)
Reinsurer A	115	65	15	0
Reinsurer B	140	40	20	8

- No amounts in dispute are greater than 90 days overdue.

a. (2.75 points)

Calculate the insurance company's Schedule F provision for reinsurance.

b. (1 point)

Describe two criticisms of using Schedule F to monitor the solvency of an insurance company.

EXAM 6 – UNITED STATES, FALL 2016

14. (3.25 points)

Given the following information from an insurance company for 2014 and 2015 (all figures are in thousands of dollars):

	2014	2015
Net premiums written	75,000	85,000
Net premiums earned	53,500	57,550
Net loss & LAE incurred	35,100	40,050
Other underwriting expenses incurred	15,000	16,000
Net investment income earned	3,700	3,450
Net realized capital gains	50	65
Net unrealized capital gains	150	250
Federal income tax incurred	525	450
Non-admitted assets	75	40
Provision for reinsurance	100	85
Dividends paid to policyholders	30	25
Dividends paid to stockholders	60	200
Policyholders' surplus	82,000	X

a. (2.25 points)

Calculate X, the 2015 policyholders' surplus.

b. (1 point)

Provide one argument for and one argument against the following statement: "The insurance company is more financially sound at year-end 2015 than at year-end 2014."

EXAM 6 – UNITED STATES, FALL 2016

15. (3.75 points)

An insurance company exclusively wrote private passenger automobile insurance from 2011 through 2013 and diversified into homeowners beginning in 2014. Given the following information from the company's Annual Statements:

Schedule P - Part 2 Summary (from 2015 Annual Statement)					
Year in Which Losses Were Incurred	Incurred Net Losses and Defense and Cost Containment Expenses Reported at Year End (\$000 omitted)				
	2011	2012	2013	2014	2015
2011	113	118	126	133	139
2012	xxx	122	136	144	148
2013	xxx	xxx	141	147	159
2014	xxx	xxx	xxx	185	202
2015	xxx	xxx	xxx	xxx	236

	Annual Statement Year				
	2011	2012	2013	2014	2015
Earned Premium	147	165	178	237	325
Loss and LAE Reserves	107	117	135	176	215
Policyholders' Surplus	134	150	168	188	211
IRIS Ratio 11	xxx	3.7	14.7	12.5	20.7
IRIS Ratio 12	xxx	xxx	9.7	24.7	25.6
IRIS Ratio 13	xxx	5.8	7.5	20.5	?

a. (2.25 points)

Calculate IRIS Ratio 13 for 2015 and indicate whether it is in the range of usual values.

b. (0.5 point)

Identify two ways that IRIS Ratio 13 results can be distorted.

c. (1 point)

Briefly describe two observations based on the company's IRIS Ratios, and identify an additional analysis that may be relevant for each observation.

16. (2.5 points)

a. (1 point)

Identify and briefly describe two major risk categories measured by the Risk-Based Capital (RBC) formula.

b. (0.5 point)

Describe the purpose of RBC from the perspective of the regulator.

c. (1 point)

Briefly describe two arguments in favor of and two arguments against using the RBC formula to calculate a universal target capital level.

17. (1.75 points)

Given the following NAIC risk charges for an insurance company:

R ₀ :	10,000,000
R ₁ :	4,000,000
R ₂ :	5,000,000
R ₃ :	2,000,000
R ₄ :	15,000,000
R ₅ :	20,000,000

And the following information for the insurance company:

Policyholders' surplus:	20,000,000
Tabular discount on medical reserves:	3,000,000
Non-tabular discount:	2,000,000

a. (1 point)

Calculate the Risk-Based Capital (RBC) ratio.

b. (0.25 point)

Identify the RBC action level (if any).

c. (0.5 point)

Briefly describe the resulting actions of both the regulator and the company under the RBC Model Act.

EXAM 6 – UNITED STATES, FALL 2016

18. (3.75 points)

Given the following information for an insurance company that is going to be acquired on January 1, 2017 (all figures are in millions of dollars):

- Amounts at time of acquisition:

Fair Value Assets	280
U.S. GAAP Assets	275
Fair Value Liabilities (other than Loss & LAE Reserves)	70
Purchase Price	11

- Expected future nominal loss & LAE payments related to liabilities incurred at time of acquisition:

<u>Year</u>	<u>Amount</u>
2017	100
2018	60
2019	40
2020 and beyond	0

- Loss & LAE payments are made halfway through each year.
- The required capital at each year-end is 50% of the average nominal unpaid loss + LAE over the previous 12 months.
- The return on capital is paid to investors at each year end.
- Pre-tax cost of capital: 9%
- Risk-free interest rate: 2%
- Illiquidity premium: 1%

a. (3.25 points)

Calculate the value of the purchaser's goodwill under U.S. Purchase GAAP accounting using the Cost of Capital Approach.

b. (0.5 point)

Briefly describe how goodwill is both calculated and amortized under SAP.

EXAM 6 – UNITED STATES, FALL 2016

19. (3.25 points)

a. (1 point)

Assume the federal corporate tax rate is 35%. Identify an insurance company's effective tax rate for each of the following:

- i. Dividends received from a corporation owned 100% by the insurance company
- ii. Tax-exempt municipal bond income
- iii. Realized capital gains
- iv. Unrealized capital gains

b. (1.5 points)

Other than the treatment of investment income, describe two adjustments made to statutory income to calculate taxable income and briefly explain why the Internal Revenue Service requires these changes.

c. (0.75 point)

An insurance company was formed in 2013. The following schedule shows the company's regular income tax and alternative minimum income tax over the past three years (all figures in thousands of dollars):

Tax Year	Regular Income Tax	Alternative Minimum Income Tax
2013	4,500	4,800
2014	3,900	3,800
2015	4,100	3,800

Determine the income tax paid by the company in 2013, 2014, and 2015.

20. (2.25 points)

An insurance company began operations in 2015. Given the following information related to a company's year-end 2015 financials (all figures in thousands of dollars):

- Paid loss: \$1,150
- Case reserves: \$550
- Management held IBNR: \$650
- Appointed Actuary's point estimate of ultimate loss: \$2,300
- Appointed Actuary's range of reasonable estimate of ultimate loss: \$2,100 to \$2,500
- Total adjusted capital: \$1,000
- Authorized Control Level Risk-Based Capital: \$475
- Materiality standard: \$100

a. (0.75 point)

Justify the type of opinion that should be issued for this insurance company.

b. (0.5 point)

Based on the information above, determine whether or not a risk of material adverse deviation (RMAD) is likely to exist.

c. (1 point)

Apply the Bright Line Indicator Test in regards to RMAD and explain how it is used by regulators.

EXAM 6 – UNITED STATES, FALL 2016

21. (1.75 points)

An insurance company is considering entering into a Loss Portfolio Transfer (LPT) reinsurance agreement whereby the reinsurer will assume 100% of the insurer's loss reserves from discontinued business. Prior to the agreement, the insurer's loss and LAE reserves and Appointed Actuary's range of unpaid claim estimates were summarized as follows (all figures in thousands of dollars):

Line	Carried Reserve	Range of Unpaid Claim Estimates		
		Low	Central	High
On-Going	750	660	700	740
Discontinued	250	240	270	300
Total	1,000	900	970	1,040

a. (1 point)

Justify the type of Statement of Actuarial Opinion (SAO) that the Appointed Actuary would issue:

- i. Before implementation of the LPT
- ii. After the implementation of the LPT

b. (0.75 point)

Fully explain how the reserves assumed by the reinsurer under the LPT would be treated by the reinsurer's Appointed Actuary in the SAO.

EXAM 6 – UNITED STATES, FALL 2016

22. (2 points)

a. (0.5 point)

Describe the standards a person must meet in order to be a Qualified Actuary to provide a Statement of Actuarial Opinion (SAO) in the U.S.

b. (1 point)

Other than the name and title of the Appointed Actuary, briefly describe four pieces of information about the Appointed Actuary that must be disclosed in the IDENTIFICATION section of a SAO.

c. (0.5 point)

Other than the name of the new Appointed Actuary, briefly describe two pieces of information that need to be communicated to the regulator by the company when there is a change in the Appointed Actuary.

EXAM 6 – UNITED STATES, FALL 2016

23. (3.5 points)

a. (0.5 point)

Briefly describe a primary purpose of the Statement of Actuarial Opinion (SAO), and identify an intended audience.

b. (3 points)

Other than disclosures related to the materiality standard and risk of material adverse deviation, identify four items on which the Appointed Actuary must provide commentary in the RELEVANT COMMENTS section of the SAO, and explain the reason for their inclusion.

EXAM 6 – UNITED STATES, FALL 2016

24. (2 points)

Given the following information for an insurance company as of December 31, 2015 (all figures in thousands of dollars):

Gross case loss and LAE reserves	40,000
Appointed Actuary's point estimate of gross IBNR	20,000
Gross carried loss and LAE reserves	58,000

And the following excerpt from the Five-Year Historical Data exhibit from the company's 2014 and 2015 Annual Statements (all figures in thousands of dollars):

	1 2015	2 2014	3 2013	4 2012	5 2011	6 2010
Surplus as regards policyholders	30,000	35,000	38,000	40,000	40,000	38,000
Development in estimated losses and loss expenses incurred prior to current year	(900)	1,500	1,600	(1,800)	2,000	4,000
Development in estimated losses and loss expenses incurred 2 years prior to current year and prior year	(1,000)	1,800	1,900	(2,000)	2,500	5,000

- The Appointed Actuary has developed a reasonable range of unpaid claims equal to +/- 10% of the point estimate of unpaid claims. The Company has no ceded reinsurance.

Draft Items A through E of the 2015 Actuarial Opinion Summary (AOS).

25. (1.5 points)

An insurance company is considering the following three reinsurance contracts:

- i. The reinsurer covers 50% of all losses. The reinsurer will pay all covered losses five years after the reinsurance contract inception date.
- ii. The reinsurer covers losses excess of \$500,000, with a profit commission of 5%. The expected reinsurance deficit (ERD) is 0.9% for the contract.
- iii. The reinsurer covers aggregate losses up to \$5 million. The ceding company is certain to incur at least \$10 million in losses. The reinsurer holds highly volatile investments that may result in returns between -30% to 120%.

Briefly explain whether each reinsurance contract qualifies for reinsurance accounting treatment under GAAP. For any contracts that do not qualify, propose a modification so that it will.

EXAM 6 – UNITED STATES, FALL 2016

26. (4.25 points)

Given the following information on a 50% quota share agreement between an insurance company and a reinsurer:

Direct Paid Loss

Policy Year	As of 12 months	As of 24 months
2014	1,000	2,000
2015	1,000	

Direct Case and IBNR Loss

Policy Year	As of 12 months	As of 24 months
2014	2,000	1,500
2015	2,000	

- The quota share has been in place for all two policy years.
- All primary policies have an effective date of January 1, and a term of one year.
- The reinsurer reserves its portion of the book at the same level as the insurer.
- The 2014 policy year was commuted at the end of 2015 for a price of \$700.
- The insurer's discount factor is 0.825.
- The reinsurer's discount factor is 0.775.

a. (2.25 points)

Using SAP, calculate the following loss triangles after the commutation:

- i. The insurer's net paid loss
- ii. The insurer's net ultimate loss
- iii. The reinsurer's gross ultimate loss

b. (1 point)

Calculate the change in taxable income due to the commutation, for each of:

- i. The insurer
- ii. The reinsurer

<<QUESTION 26 CONTINUED ON NEXT PAGE>>

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EXAM 6 – UNITED STATES, FALL 2016

26. (continued)

c. (0.5 point)

Briefly describe two motivations for an insurer to enter into a commutation.

d. (0.5 point)

Describe how financial instability of a reinsurer may impact the price of a commutation.

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

POINT VALUE OF QUESTIONS

QUESTION	VALUE OF QUESTION	SUB-PART OF QUESTION						
		(a)	(b)	(c)	(d)	(e)	(f)	(g)
1	3.25	0.75	0.50	1.00	1.00			
2	2.50	0.50	1.00	1.00				
3	3.50	1.00	0.50	1.00	1.00			
4	2.50	0.75	0.75	1.00				
5	2.50	2.50						
6	3.00	0.75	0.75	1.50				
7	3.00	1.50	1.50					
8	2.50	0.50	1.00	0.50	0.50			
9	2.50	1.00	1.50					
10	4.00	1.75	0.75	1.50				
11	2.50	1.25	0.75	0.50				
12	2.50	2.50						
13	3.75	2.75	1.00					
14	3.25	2.25	1.00					
15	3.75	2.25	0.50	1.00				
16	2.50	1.00	0.50	1.00				
17	1.75	1.00	0.25	0.50				
18	3.75	3.25	0.50					
19	3.25	1.00	1.50	0.75				
20	2.25	0.75	0.50	1.00				
21	1.75	1.00	0.75					
22	2.00	0.50	1.00	0.50				
23	3.50	0.50	3.00					
24	2.00	2.00						
25	1.50	1.50						
26	4.25	2.25	1.00	0.50	0.50			
TOTAL	73.50							

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.
- Candidates should justify all selections when prompted to do so. For example, if the candidate selects an all year average and the candidate prompts a justification of all selections, a brief explanation should be provided for the reasoning behind this selection.
- 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.
- Candidates should note that the sample answers provided in the examiner's report are not an exhaustive representation of all responses given credit during grading, but rather the most common correct responses.
- Candidates should read each question carefully and answer the question as it is presented.
- In cases where a given number of items were requested (e.g., "three reasons" or "two scenarios"), the examiner's report often provides more sample answers than the requested number. The additional responses are provided for educational value, and would not have resulted in any additional credit for candidates who provided more than the requested number of responses. Candidates are reminded that, per the instructions to the exam, when a specific number of items is requested, only the items adding up to that number will be graded (i.e., if two items are requested and three are provided, only the first two are graded).

EXAM STATISTICS:

- Number of Candidates: 567
- Available Points: 73.50
- Passing Score: 51.75
- Number of Passing Candidates: 292
- Raw Pass Ratio: 51.50%
- Effective Pass Ratio: 54.68%

SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 1	
TOTAL POINT VALUE: 3.25	LEARNING OBJECTIVES: A1, A4
SAMPLE ANSWERS	
Part a: 0.75 point	
<ul style="list-style-type: none">• Paul is licensed NY insurers and sell business in state Virginia w/o license. State of Virginia objected and Paul sold policies anyway. Paul was sued and appealed to Supreme Court. Court decide insurance is contract delivered locally and state has sole responsibility to regulate• Agent Paul in VA want to register a license to write insurance business in VA for his NY client. Due to input guarantee deposit for the business, VA rejected Paul's application. Paul went ahead and wrote insurance anyway and got arrested. US Supreme Court decided insurance is not interstate business and should be regulated by state regulators.• Paul applied for license to sell insurance for insurers licensed in NY. VA denied him license since the insurers didn't have fund deposited properly. Paul went ahead and sold insurance in Virginia anyway and was arrested. The Supreme Court rules that insurance was not interstate commerce and thus each state had its own authority to regulate.• Paul tried to sell insurance in VA from NY insurers. Did not pay required fees to do so and sold insurance anyway. Insurance ruled as not interstate commerce. Regulation remained at the state level• Paul was arrested for selling insurance products from insurer domiciled in NY to consumers located in Virginia after Virginia DOI warned him not to do so. Supreme Court ruled that insurance is not interstate commerce and should be regulated at the state level.	
Part b: 0.5 point	
Sample part i) <ul style="list-style-type: none">• Sherman Act does not apply to insurance based on Paul's case. Federal does not regulate insurance, state has sole responsibility• No impact because the Sherman Act was only applicable to Interstate commerce (and thus not insurance) before the SEUA ruling.	
Sample part ii) <ul style="list-style-type: none">• Although it had no impact on state regulation of insurance, the Sherman Antitrust Act did prompt some states to pass similar laws, which did increase some states regulatory authority over insurer's actions.• State can pass its own laws to regulate anti-trust issues since Sherman Act does not apply to insurance.	
Part c: 1 point	
Sample part i)	

SAMPLE ANSWERS AND EXAMINER'S REPORT

- Sherman Act now applies to insurance and insurance compacts are illegal. NAIC proposed laws passed to allow cooperative rate setting.
- NAIC advocated for the return on insurance compacts on the basis they were necessary for accurate insurer pricing. State regulation better for differing insurance environment.
- NAIC model laws allowed cooperation in setting rates through compacts after SEUA Sample part ii)
- A subcommittee forms to urge return of regulation to states.
- NAIC model laws laid out plans for state regulation of insurance. Following SEUA, NAIC tried to pressure Congress into passing law assigning insurance regulation to states.
- State insurance regulation: many states adopted the model laws provided by the NAIC, allowing them to control of insurance regulation after McCarran-Ferguson, which required aspects of the industry not considered by the state to be regulated by the federal government

Part d: 1 point

Description of Act:

- Require price difference be justified by different operation costs and prohibited price discrimination
- Robinson Patman Act was an amendment to Clayton Antitrust Act which doesn't allow price discrimination. It stated that differences in price need to be justified, i.e. having lower operating costs.
- The Robinson-Patman Act is an amendment to the Clayton Act that allows price discrimination only if it can be explain by operation efficiencies leading to competitive advantage

Impact on price optimization:

- Price optimization adjust individual price with same risk profile based on marketing goals etc. retention, demand models and instead of operation costs. For example, increase price for customers less likely to shop around when other characteristics are the same.
- Individual price optimization might be in violation because it can result in similar insureds with the same level of risk paying different insurance premiums. i.e. price optimization can recognize willingness to shop around, etc., and apply these results to the rate.
- Individual price optimization tries to meet a business objective by finding ways to discriminate on an individual basis using non-parametric algorithms. This is not operation efficiency and so it violates Robinson-Patman.

EXAMINER'S REPORT

The candidates were expected to understand the history of insurance regulation at the state and federal level, and the reasons why it ended up being mostly regulated at the state level. Some level of knowledge of insurance compacts and the purpose of the Sherman Anti-Trust Act is also needed to earn full credit.

The subtleties of the purpose and function of the Robinson-Patman Act was lost on many candidates, and circumstances underlying *Paul v. Virginia* was not well explained or understood by

SAMPLE ANSWERS AND EXAMINER'S REPORT

many candidates.

Part a

The candidates were expected to understand the circumstances and activities that ultimately led to *Paul v. Virginia*, and the outcome of the Supreme Court case.

Common mistakes included:

- Not realizing or not making clear that Paul was located in VA but trying to represent a NY insurer in VA
- thinking Paul lived in NY and was trying to sell insurance in VA, not that the insurer was based in NY
- not recognizing that the main issue was flouting the state law of Virginia.

Part b

The candidates were expected to know that the Sherman Anti-Trust act was a federal act that didn't apply to state's regulation of insurance due to the precedent of *Paul v. Virginia*

Common mistakes included:

- Providing the same information for both subsections. Credit was given once, but not a second time
- Stating that the Sherman act DID apply to insurance as it was a regulated at the state level

Part c

The candidates were expected to know that the NAIC wanted to amend the Sherman / Clayton Acts to allow compacts for beneficial purposes (e.g. pooling data for rate adequacy / coverage concerns) but not to hinder competition. Also, the candidate should recognize that the NAIC wanted oversight of insurance at the state level, and took actions appropriately.

Common mistakes included:

- Not giving the NAIC's viewpoint regarding the two issues (i.e. stating that compacts were illegal after the SEUA decision); stating that the NAIC desired to keep compacts illegal or that regulation should remain at the federal level.

Part d

The candidates were expected to know that the Robinson Patman (R-P) act prohibited price discrimination but made an exception for good-faith differences related to operating costs. The candidates were expected to know specific examples of price optimization variables that could possibly violate the R-P act, and explain the reason for potential violation.

Common mistakes included for subpart i):

SAMPLE ANSWERS AND EXAMINER'S REPORT

- discussing changes in premium that are tied to changes in operating expense or, loss costs instead of making it clear that the R-P act is in regards to charging **different insured with the same risk characteristics** different rates.
- A response to the effect that “price differences related to differences in operating costs were allowed,” without mentioning price discrimination specifically was not a full credit response
- Describing racial or socioeconomic discrimination, which is not part of the R-P act

Candidates erroneously thought the “discrimination” was related to race or socioeconomic variables, which isn't the intent of the R-P act.

Common mistakes included for subpart ii):

- Failure to understand the term ‘price optimization’, resulting in lack of specific discussion of price optimization as it is impacted by R-P
- Stating that charging insured different rates based on differences in loss cost or level of risk would be a violation or R-P
- Discussing tying or bundling, which is prohibited by the Clayton Act, as a violation or R-P

SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 2	
TOTAL POINT VALUE: 2.5	LEARNING OBJECTIVE: A1
SAMPLE ANSWERS	
Part a: 0.5 point	
<ul style="list-style-type: none">• Regulators would be concerned that insureds would have an increase in premium AND (one or more of the following):<ul style="list-style-type: none">○ without a change in inherent risk○ it would be excessive or company would earn excessive profits○ it would disproportionately impact protected classes or lower income people or lower socioeconomic insureds○ would be unaffordable○ would lead to less availability of insurance○ it is unfair or inequitable or not actuarially sound○ Not good for the public○ out of consumers control○ it would be unwarranted or unnecessary○ solely due to lower aggregate CBIS and no other justification○ consumers complain to state regulators • Regulators would be concerned that renewing customers with falling CBIS scores could see increased insurance rates before rates are adjusted to adapt to new conditions. • If insurer only provides rates for people with high credit scores, residual market will increase as more people will fall below insurers threshold.	
Part b: 1 point	
Any two of the following: <ul style="list-style-type: none">• If the current rate relativities between score classes remains valid, and CBIS scores are dropping in essentially a uniform fashion, the pricing actuary would respond to the distributional shift via an offsetting change to the base rate. There would be no long-term impact on the premium collected just from the CBIS shift.• The actuary should be regularly reviewing the cost relativities in the various CBIS rating categories. If the cost relativities between CBIS score classes are shifting over time, the pricing actuary will adjust the relativities to reflect the emerging cost differentials. (A dramatic shift in credit scores (from the economic downturn) could disrupt the current relative rates among risks with insurance scores. Insurers may adjust indicated rate differentials for different insurance score rates.)• Remove CBIS from rating by using a proxy to replace it or recalibrating other rating variables absent the CBIS• Incorporate the rising premiums into the premium trend selection, which will result in a decrease in the overall indication• Use CBIS only in accept/reject or tier placement underwriting decision making instead of in rating.• Capping the overall premium change that insured would see as a result of their credit	

SAMPLE ANSWERS AND EXAMINER'S REPORT

score change

- Remapping or changing the ranges of CBIS corresponding to certain factors in rating
- Freezing insureds' credit scores or using an average score over several years to limit the impact
- Restrict CBIS score changes from resulting in an increase in premium. Only allow the impact to be premium neutral or result in a decrease.
- Change the rate differentials similarly to how Homeowners rating will change when the housing market shifts.
- Calculate the overall premium after the downturn using CBIS from before the downturn and compare to the total charged premium after the downturn.
- Compare the overall changes in CBIS for the company's insureds to the countrywide change in CBIS.
- Allow the rate changes to flow through as the insurer expects worse loss experience in the way of more fraud and moral hazard on the part of its insureds.
- Use more conservative LDF selections in anticipation of overall losses.
- Introduce a rating factor that is indicative of the performance of the overall economy to reflect any recession/depression simultaneously rather than whenever each individual state got to it.

Part c: 1 point

Any two of the following:

Principle 1: A rate is an estimate of the expected value of future costs.

- Capping premiums results in the expected future costs being higher than the rate charged.

Principle 2: A rate provides for all costs associated with the transfer of risk.

- By capping individual insureds and not adjusting the premiums of the other insureds, the company is failing to provide for all costs associated with the transfer of risk on an aggregate level

Principle 3: A rate provides for the costs associated with an individual risk transfer.

- Capping individual premiums prevents insurer from charging a rate that accounts for all costs associated with the transfer of risk on that individual.
- If the insurer subsidizes the capped insureds by raising the rates on the uncapped insureds, the uncapped insureds are paying more than the costs associated with individual risk transfer.

Principle 4: A rate is reasonable and not excessive, inadequate, or unfairly discriminatory if it is an actuarially sound estimate of the expected value of all future costs associated with an individual risk transfer.

- Capped rates would be lower than the actuarial sound rate prescribed by the rating plan, leading to overall inadequate rates.
- Capped rates would be lower than the actuarial sound rate prescribed by the rating plan, leading to individual inadequate rates.
- Two identical risks profiles could be provided different rates if one is a new insured and the other is renewing and therefore subject to the cap.

SAMPLE ANSWERS AND EXAMINER'S REPORT

- If the insurer raises rates on the uncapped insureds, to meet an overall premium need, the premium they are paying could be excessive.
- It is unfairly discriminatory to cap renewal business and not new business.
- If insureds receiving the cap tend to have lower CBIS scores, this could be unfairly discriminatory

EXAMINER'S REPORT

The candidates were expected to understand the interaction between regulators and practicing actuaries as well as how regulation and actuarial work is impacted by the "Statement of Principles Regarding Property and Casualty Insurance Ratemaking".

Part a

The candidates were expected to describe regulator concerns about the use of credit scoring in insurance rating.

Common mistakes included:

- Saying that premiums would increase without mentioning a regulators concern about that change
- Stating that higher CBIS scores would lead to a premium increase without any further comment about regulator concerns

Part b

The candidates were expected to describe two ways that a rating plan could be modified in response to a changing environment where a rating variable may change in predictive or explanatory power. Candidates provided a wide variety of responses that successfully responded to this question.

Common mistakes included:

- Saying they actuary should change base rates without saying anything about a review of the CBIS relativities
- Vague answers such as "analyze the data" or "adjust the factors"

Part c

The candidates were expected to apply the Statement of Principles on Ratemaking to CBIS.

Common mistakes included:

- Stating a principle that is not part of the statement of principles in question
- Responding to 'discrimination' instead of 'unfair discrimination'
- Substituting expected loss for expected cost
- Responding to violation of the principles unrelated to capping as described in the question
- Listing a principle without mentioning a violation

SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 3	
TOTAL POINT VALUE: 3.5	LEARNING OBJECTIVE: A2
SAMPLE ANSWERS	
Part a: 1 point	
<p>Any four of the following:</p> <ul style="list-style-type: none"> • Uncollectible Reinsurance or Reinsurer Bankruptcy • Catastrophic Loss • Inadequate Rates or Poor Underwriting or Lack of data • Rapid Premium Growth • Inadequate reserves, Significant adverse development • Fraud • Lax Control over Managing general agents • Entering into a new market, New territory, Cyber Liability • Investment Practices, Speculative Investments, Risky Investments • Asbestos Losses, Court rulings 	
Part b: 0.5 point	
<ul style="list-style-type: none"> • Non-insurance goes to court directly. For insurance, receiver is assigned for the liquidation. Before liquidation, regulator can restrict business of financially troubled insurers or take corrective actions/control of companies before it goes insolvent. Insurance is also protected by guarantee fund. • Bankruptcy is handled at state level instead of at federal level. There is a guaranty fund to still pay for claims even though there are restrictions. • Before bankruptcy, the commissioner comes in and tries to help the at-risk company. This is called a receivership. The company can then either be rehabilitated or liquidated. If liquidated, policyholders are covered by guaranty funds which do not exist in other industries. • Not just creditors demanding payment but also policyholder. State guaranty funds are available but less likely to receive federal bailout money due to state regulations of insurance. Other industries just have creditors, no guaranty funds, but yes to fed \$. • Bankruptcy process for insurers is handled at state level with the state DOI's/commissioner overseeing liquidation and insolvency with the use of guaranty funds. Other industries have bankruptcy handled at federal level and have possible access to federal funds. • Insurance is unique since it is regulated by the state not the federal and the state holds a guarantee fund to repay customers and claimants 	
Part c: 1 point	
<ul style="list-style-type: none"> • Against – insurer insolvencies are rare compared to the non-insurance industry and in the event of insolvencies, guaranty funds have done a good job of compensating policyholders. For – insurance, unlike most other products, is a promise to pay that the public depends on. Insolvencies to insurers are far more threatening than bankruptcies of non-insurance companies. 	

SAMPLE ANSWERS AND EXAMINER'S REPORT

- For: In some cases, insurance is a compulsory purchase and the main objective is to protect the policyholders. A stringent solvency regulations would protect them the most. Against: Because regulation is at the state level, failing regulation is picked up by peer review of other state regulators. The current system has been proven to be doing a good job.
- In favor – In order to keep rates fair and protect policyholders, there should be more stringent solvency regulation for the interest of the public, so companies don't go insolvent and can't pay claims. Against- insurance industry has done a good job in monitoring preventing insolvency as is. Also, back stops in place where they do occur, i.e. guaranty funds.
- Favor – costs of insolvencies either distort the market (guaranty fund assessments) or harm consumers, so more should be done to prevent insolvencies. Against- system is currently working reasonably well to prevent insolvencies
- More regulations will add more levels of Solvency protection by increasing duplication and checks and balances (Advantage.) More Stringent solvency regulations might cost too much and shift some of that cost to the policyholders. (Disadvantage)
- For: To better protect consumers, the regulators need to make sure the insurance companies have enough surplus to pay for the claims. More stringent solvency regulation is better for this. Against: More stringent solvency regulations can hinder competition which potentially will harm availability of insurance products. This can also cause compliance cost to increase.
- In Favor: the main purpose for solvency regulation is to protect policyholders. Requiring more stringent solvency standards would better ensure this. Against: the more stringent the standards, the harder it will be for insurers to meet the standards. This could cause insurers to pull out of markets or increase rates, causing an increase in the residual market or unaffordable and unavailable coverage.

Part d: 1 point

- Fact Finding – using IRIS /RBC/Annuals statements to grade insurers and highlight those that might be at risk of insolvency.
Company Intervention - If it's required the following steps may be needed: Mandatory insurer action, Administrative action, rehabilitation, liquidation.

EXAMINER'S REPORT

The candidates were expected to know or be able to describe current programs used to monitor solvency including insolvency

Candidates performed well with part a, but for the rest of the question not as well. The candidates seemed to have trouble interpreting what the question was asking.

Part a

The candidates were expected to list 4 items out of a possible 8 choices, 6 directly from the Porter reading.

SAMPLE ANSWERS AND EXAMINER'S REPORT

Common mistakes included:

- Bad management – not specific enough, all of the reasons given are bad management.
- Inadequate reinsurance – no credit – need to say uncollectible reinsurance unless mention that reinsurance is inadequate in case of large catastrophic loss.
- Discussing pricing or rates 3 times with different complaints about the rates.
- Heavy concentration in one area or line of business (such as homeowners)
- High expense ratio
- Regulatory fallibility (From the Vaughan paper on “The Economic Crisis and Lessons from (and for) U.S. Insurance Regulation.)
- Adverse selection – not a direct cause,

Part b

The candidates were expected to compare the bankruptcy process for insurers and other industries. The candidates were expected to know federal bankruptcy courts were not used for insurance companies, if a state court judges has determined that an insurer is insolvent, then state law governs the insurer's orderly liquidation and payment of claim. Insurance guaranty funds, which pay claims made against insolvent insurers, are another unusual aspect of the insurance industry.

Common mistakes included:

- Describing the insolvency process for insurers without comparing to other industries
- Describing state commissioner for other industries that do not have commissioners

Part c

The candidates were expected to provide an argument for and against a potential change to the solvency regulatory environment.

A number of the candidates described the argument for more stringent solvency regulation than is currently in place and other candidates described the current situation and why less stringent solvency regulation is better. Credit was given for both viewpoints.

The most common errors were:

- Insurers have done better than other industries, does not need more regulation.
- Discussed need for rate regulation or affordability and availability not solvency regulation.
- Candidates just say more regulation or less regulation is better without a reason.
- Companies would have to keep more capital in surplus to meet solvency requirements, so there is less opportunity for them to invest the money to get better returns. (It would seem that more capital implies more money to invest.)

SAMPLE ANSWERS AND EXAMINER'S REPORT

Part d

The candidates were expected to reply with Step 1 – Fact finding where the regulator tries to develop a clear picture of the insurer's balance sheet through a fact-finding process either at an insurer's office and/or through written reports. Step 2 is implementation of regulatory actions which includes mandatory corrective action, or administrative supervision or placing the insurer in receivership for rehabilitation or ultimate liquidation.

Common mistakes included:

- Describing current programs used to monitor solvency with mandatory corrective action as the first step and administrative supervision, receivership, and/or liquidations as the next.
- Discussing only corrective actions but not administrative supervision.
- Describing only minor actions not major actions, should at least mention placing insurer in receivership.
- Explaining step 1 (fact finding) twice
- Writing "fact Finding" and "Company Intervention" without further detail.

SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 4	
TOTAL POINT VALUE: 2.5	LEARNING OBJECTIVE: A4
SAMPLE ANSWERS	
Part a: 0.75 point	
<u>Sample Responses:</u> <ul style="list-style-type: none">• Report to the House and Senate each year on the state of the insurance industry• Assist in the administration of TRIA.• The FIO collects data on the insurance industry.• Make recommendations on how to improve insurance regulation.• Monitor the insurance industry• Can pre-empt state regulation when a non-US insurer is being treated less fairly than a US insurer under a covered agreement• Assist in negotiation of international agreements.	
Part b: 0.75 point	
<u>Sample Responses:</u> <ul style="list-style-type: none">• Can't preempt state regulation regarding (each accepted as 1 response): Rates, Underwriting, Coverage Requirements, Sales Practices, Solvency/Capital Requirements (unless such requirements result in less favorable treatment of a non-US insurer vs a US insurer• If the information is confidential, they should also keep it confidential.• The FIO can only preempt state regulations to the extent they conflict with a covered agreement.• Cannot request information from small insurers.• Must look for information from state and federal government sources before requesting information from the insurer.• FIO may not designate an event a terrorism event for the purposes of TRIA, only the Secretary of the Treasury may• FIO may only advise, but not accept international insurance agreements.• FIO Lacks enforcement power on subpoenas• Must go through a rigorous process to preempt state law	
Part c: 1 point	
<u>Sample Responses:</u> <p>For:</p> <ul style="list-style-type: none">• It now makes it easier for reinsurers to operate in multiple states because if the home state is NAIC accredited (or equivalent) and recognizes credit for the reinsurer- other states must also recognize credit.• Reinsurers can be financially regulated only by their domiciliary state. Less costly for reinsurers to operate in all states.	

SAMPLE ANSWERS AND EXAMINER'S REPORT

Against:

- The insurers in the US will now face steeper competition from alien insurers that try to take away market share, and now have an easier path to doing so.
- Dodd Frank made it easier for consumers to access surplus lines which are notoriously difficult underwriting risks. Reinsurers may be less willing to reinsure these risks and therefore lose out on business.
- Because of weaker solvency regulation, insurers are more likely to demand additional collateral from the reinsurers.
- As a result of Dodd Frank, a reinsurer may be designated a SIFI and therefore face additional regulation.

EXAMINER'S REPORT

The candidates were expected to describe the role of the Federal Insurance Office. Parts A and B were direct points from the reading with only a brief description required. Part C, however required more critical thinking, with the candidates needing to support an argument both for and against Dodd-Frank.

Part a

The candidates were expected to know the basic responsibilities given the FIO by the Dodd-Frank act.

Common mistakes included:

- Statements that the FIO designates insurers as SIFI's and/or is responsible for monitoring/regulating them their solvency. Designating SIFIs is the responsibility of the FSOC and the FRB respectively. Responses that the FIO is responsible for identifying and/or recommending the insurers for SIFI designation to the FRB were accepted.
- Statements that the FIO is responsible for ensuring that states do not discriminate between domestic and alien reinsurers. This was not awarded credit unless candidates also mentioned that covered agreements/treaties must also be breached.
- Misstatements that the FIO negotiated agreements with foreign insurers, instead of foreign countries or foreign insurance regulators.
- Assertions that the FIO "oversees" the insurance industry. This was not accepted as it didn't display specific knowledge of the powers that FIO is given.

Part b

The candidates were expected to state limitations on the FIO's powers as addressed in the readings. A variety of restrictions on the FIO's powers were accepted.

Common mistakes included:

- Responses that the FIO can't pass laws. As the FIO was never given the responsibility of passing laws, this was not awarded credit. In general, any limitation on the FIO of a power it never had originally was not accepted.

SAMPLE ANSWERS AND EXAMINER'S REPORT

- Responses that if states are regulating insurance, federal regulation does not apply.
- Responses that states still are the insurance regulators, or that FIO could not regulate the "business of insurance". This was considered too vague.
- Statements that the FIO has no enforcement power over states or can only advise states and not regulate them. A similar response was that the FIO cannot supersede state regulation.
- Responses that the FIO can't directly intervene with an insurance company. This is not a restriction on the FIO's key duties, which don't involve directly regulating insurers.
- Statements that the FIO had to attest that information it requested from insurers was required before requesting it.

Part c

The candidates were expected to provide a response that correctly articulated knowledge of a component of Dodd-Frank -- and logically spelled out a benefit/detriment to a reinsurance company.

Some candidates brought up the topic of "certified" reinsurers. This was not so much a result of Dodd-Frank as the NAIC's implementation of a Dodd-Frank compliant mechanism for Schedule F. However, the concepts are closely related and the responses generally displayed a high level of knowledge about the topic. If the response was otherwise acceptable, credit was awarded for this.

Common mistakes included:

- Responses that only answered half the question for the "favor" part - they did not extend the point they made to say how it benefited the reinsurer as the question asked them to.
- Responses where the perspective was not that of a reinsurer, as the question asked.
- Statements that Dodd Frank did not impact alien reinsurers.
- References to a reinsurer's (instead of insurer or cedant's) state of domicile re: credit for reinsurance.
- Confusing the concepts of non-admitted carriers and reinsurers, and blurred the lines between Dodd-Frank's impacts on the two.
- Answers that premium tax is paid only in the home state of the insured for reinsurers.

SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 5	
TOTAL POINT VALUE: 2.5	LEARNING OBJECTIVES: A2, A4
SAMPLE ANSWERS	
<p>New system of rate and solvency regulation:</p> <ul style="list-style-type: none">• Would put solvency regulation at the federal level and rate regulation at the state level. Federal gov't would use IRIS ratios, RBC and ORSA to determine company position. States would have ability to choose regulatory filing requirements (e.g. prior approval, file and use, use/file, no file)• Federal regulation with no state regulation or interference. The federal government is responsible for regulation, monitoring, licensing, rate approvals, financial assessments, and ensuring insurer solvency of the insurance industry	
<p><u>Sample Responses for Advantages of the program:</u></p> <ul style="list-style-type: none">• State solvency regulation: Duplication exists because multiple states regulate a given company (multi-state insurer) can reduce regulatory fallibility (human error).• Federal solvency regulation: Reduce costs – by having uniform forms/processes/requirements, insurers can operate in multiple states much easier. This will reduce expense ratios across industry and therefore reduce prices to policyholders• Federal solvency regulation: Makes it easier for the US to negotiate/comply with the trade agreements affecting insurance, as it eliminates potentially discriminatory treatment of foreign insurers (e.g. unauthorized reinsurance)• State solvency regulation: Diversity of perspective – multiple views lead to more centrist (rather than extremist) solutions. Reduces regulatory capture (regulator siding with special interest group)• Remove prior approval: removing prior approval will allow insurers to more quickly get rates to market. It allows competition to play a more active role in rate regulation which increases coverage availability and better risks segmentation• File and use: file and use allows more flexibility in setting rates so insurers can respond more quickly to changes in the market place while still giving regulators the ability to review rates in a timely manner• ORSA: ORSA provides a solvency approach that is more sensitive to management input, potentially allowing for more accurate and transparent solvency regulation• Using Solvency II the insurers can better reflect its capital requirement with respect to the inherent risk of each line of business. E.g. homeowners policies capital requirement can include provision for catastrophe risks• State rate regulation: Rates based on coastal hurricane or earthquake exposure will be regulated by regulators at the state level who better understand those risks	
<p><u>Sample Responses for Disadvantages of the program:</u></p> <ul style="list-style-type: none">• Federal solvency regulation: Regulatory capture – lacking the diversity of perspective in the state regulation system, it will be easier for the single regulator at the federal level to side with one interest group or have one extreme view on insurance regulation	

SAMPLE ANSWERS AND EXAMINER'S REPORT

- Federal solvency regulation: Lack of duplication/redundancy increases the likelihood of regulatory mistakes going unnoticed, potentially allowing preventable negative outcomes (e.g. insolvencies) to occur
- Use and file: Use and file regulatory system is not as strict as a prior approval system so companies may get away with damaging practices for a time, even if those might be caught and fixed eventually
- Prior Approval: since approval takes time, insurers may not be able to respond to market changes quickly and could risk adverse selection
- IFRS: IFRS aspects would make it harder to compare and monitor because each insurer's internal model will be different so would need to develop expertise in understanding the models and how to compare companies
- State rate regulation: rate regulation by the states makes it more difficult for insurers to operate in multiple states. The different filing requirements may be too burdensome to deal with in order to expand to multiple states
- State rate regulation: may be inefficient as it requires multiple filings with multiple regulator bodies which takes a lot of time and effort
- Federal solvency regulation: open ins industry to possibility of federal bailout, which could lead to company less concerned about solvency. As they will always have notion of a bailout in back of mind

EXAMINER'S REPORT

The candidates were expected to use their knowledge of the current state and federal insurance regulation system to propose a new system of rate and solvency regulation, and provide advantages and disadvantages of the proposed system.

Candidates were generally able to adequately propose a new system of rate and solvency regulation. A range of new system ideas was allowed. A response that did not receive full credit was to suggest a system that was not plausible under basic US law, or one that did not make sense across any private business.

Common mistakes included:

- Candidates did not give details on the identified (dis)advantage – either the reason the (dis)advantage would occur, or a potential impact on the industry
- (Dis)advantages did not make sense, given the system they described.
- (Dis)advantages were contradictory – e.g. opposite effects described for the same system.

Examples:

- Describing a system under which state and federal regulators cover non-overlapping topics, then saying that duplication of effort is a disadvantage
- Describing a system with only state or only federal regulation applies, and listing duplication of effort is a disadvantage
- Stating that 'double review' by two regulators will help catch errors after describing a system where there is only one regulator (state or federal)

Note: The initial posting of the Examiners Report stated that "Candidates were further expected

SAMPLE ANSWERS AND EXAMINER'S REPORT

to compare their proposed system to the existing regulatory system.” This comment was included erroneously, and such a comparison was not required.

SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 6	
TOTAL POINT VALUE: 3	LEARNING OBJECTIVES: B1, B2, B3
SAMPLE ANSWERS	
Part a: 0.75 point	
<p><u>Sample Responses for A Sufficiently Large Number of Insureds to Make Losses Reasonably Predictable</u></p> <ul style="list-style-type: none">• There are not a large number of insureds that have historically been exposed to terror attacks• There are not enough insured to pool to predict the risk reasonably• The risk pool is non-uniform, there may not be enough insureds to disperse the costs over• Number of insureds must be great enough that losses are reasonably predictable --- terrorism is rare so this fails• There is not a large number of insureds so losses are not very spread out and it is difficult to determine actuarially sound rate• Small number of risks• Not a large number of independent insureds• There are not a large number of insureds to enable risk to be predictable• A large number of insureds is needed to be reasonably predictable and this is not available for terrorism• There is not enough insureds or loss history to make losses reasonably predictable so pricing is difficult• There are not enough insureds to determine reasonable expected losses for an individual insured• Terrorism is not frequent so that there is not enough insureds or loss/coverage information to have predictable expected losses• There must be a large number of insureds to make risk reasonably predictable – not many insureds need terrorism risk• Not a large number of insureds are affected by terrorism activity which also reduces price determinations• There are not a large number of risks making it hard to estimate expected losses and price• It does not have a large amount of insureds• Requires large number of insureds to make the losses predictable which is not the case with terrorism• Does not affect a large number of insureds• Sufficiently large number of reasonably similar risks to make losses reasonably predictable – terrorism fails (doesn't exist for terrorism coverage) not predictable <p><u>Sample Responses for Losses Must be Fortuitous or Accidental</u></p> <ul style="list-style-type: none">• Attacks are planned and not random in the way a hurricane is• Intentional, not accidental• Insurable risks should be fortuitous; terrorism is an intentional act• Terrorism is the act of humans and therefore is not fortuitous. Insurable losses should be	

SAMPLE ANSWERS AND EXAMINER'S REPORT

fortuitous

- Terrorist attacks are not fortuitous or accidental
- Not accidental
- It is an intentional act (not fortuitous)
- Not fortuitous → terrorist did damage on purpose
- Losses aren't fortuitous. Terrorism isn't an accident, it involves people actively trying to cause harm
- Acts must be accidental → terrorism is an intentional act
- Losses are not fortuitous. Since terrorism attacks are human acts, they are not "random" in the way a car crash is.

Sample Responses for Losses Must Not be Catastrophic

- Losses are not independent. It is likely that a terrorist attack is catastrophic and affects multiple policies simultaneously.
- It is usually catastrophic if it happens
- Losses affect a large group of insureds in a certain region making exposure to risk really regionally dependent
- Losses are catastrophic
- Catastrophic element
- It is catastrophic in nature
- Might be considered catastrophic for small insurers or those who are not diversified geographically
- Events are infrequent and too volatile to price accurately

Sample Responses for Lack of Public Data about Both the Frequency and Severity of Terrorist Acts

- The frequency & severity of terrorism is very difficult to gauge so an actuarially sound price may not be available
- No credible data to predict the future losses
- Large number of loss needed but not many terrorism events occurred.
- Lack of data to rate the premium
- It does not have sufficient data
- Very few occurrences, so little data
- Does not have enough data to derive accurate price
- Low frequency, high severity nature of losses

Sample Responses for Company Should Not Insure an Event that Could Bankrupt the Firm

- Losses are catastrophic: A loss event could lead to insolvencies without TRIA, one loss can cost billions of dollars
- Availability of reinsurance. A lot of reinsurers exclude terrorism losses (after insolvencies resulting from 9/11). Without reinsurance the potential huge losses are uninsurable as they would lead to insolvencies
- The losses can be astronomically high which could cause a swift insolvency issue

Part b: 0.75 point

SAMPLE ANSWERS AND EXAMINER'S REPORT

Sample Responses for Goal 1 - Create a temporary federal program of shared public and private compensation for insured terrorism losses to allow the private market to stabilize.

- Provide temporary coverage in wake of 9/11. Provide government backstop for terrorism losses.
- Share the cost of terrorism with society for a period of time before industry get back capacity.
- Provide temporary solution by reinsuring terrorist acts while the private market stabilized after 9/11.
- Increase insurer's ability to write terrorism insurance by providing reinsurance.
- Create a temporary federal program of shared public and private compensation for insured terrorism losses to allow the private market to stabilize.

Sample Responses for Goal 2 - Protect consumers by ensuring the availability and affordability of insurance for terrorism risk.

- Protect consumers by making sure terrorism coverage is available and affordable.
- Provide affordable and available terrorism coverage
- Ensure coverage is available and affordable to all commercial purchasers who desire it.
- Fill the unmet need after 9/11 for terrorism insurance

Sample Responses for Goal 3 - Preserve state regulation of insurance

- Retain state based system of regulation of rates.
- Protect state regulation of insurance

Part c: 1.5 points

Sample Responses for Goal 1

- Not met, so far this system has been renewed 2 already and it seems like, it's no longer a temporary program.
- They provide coverage of 85% of losses over a 20% deductible and act as reinsurer for the primary market allowing them to offer this coverage.

Sample Responses for Goal 2

- Yes, government mandates that the insurer has to provide affordable terrorism coverage in a CGL policy, unless insured does not want to purchase.
- Yes TRIA increased availability of terrorism coverage significantly post 9/11. It provides a strong reinsurance backstop so that private insurers are willing to write the insurance.
- Affordable – Goal not met. As evidenced by a low take-up rate in commercial insurance, terrorism coverage may be prohibitively expensive to potential consumers.

Sample Responses for Goal 3

- The act expressly provides that nothing in the act shall affect the regulatory authority of the individual states.
- law has not interfered with regulation but hasn't been tested yet since there has not been a covered loss
- The state regulates rates.

EXAMINER'S REPORT

The candidates were expected to demonstrate knowledge of TRIA and evaluate the Act.

SAMPLE ANSWERS AND EXAMINER'S REPORT

Candidates generally did well in discussing why terrorism was not insurable. Candidates struggled with providing detail on whether or not the Act was successful in meeting its goals.

Part a

The candidates were expected to list three reasons terrorism is not considered insurable.

A common error was not providing complete thoughts. Some examples include:

- It is Not Measurable; the candidate needed to explain why it was not measurable
- It is Unaffordable; the candidate needed to explain why it was unaffordable
- It is Not Independent; the candidate needed to explain why that would not be insurable
- It is Hard to Define; the candidate needs to describe why it is hard to define and why that is not insurable
- Companies are Unwilling to Write; the candidate needs to describe why companies do not want to write coverage
- Similar answers that needed some explanation are – difficult to price, adverse selection and location

Part b

The candidates were expected to list three goals of TRIA.

Common mistakes included:

- TRIA covered 9/11 losses
- TRIA provided insurance
- Prevent business/economic disruption
- Prevent insurance company insolvencies

Part c

The candidates were expected to fully describe why or why not each of the three goals is met by TRIA.

A common mistake was not providing enough detail on one or more goals. Some examples include:

- Goal 1 – Government acts as reinsurer
- Goal 2 – Government will subsidize loss
- Goal 2 – Availability has increased
- Goal 2 - Insurers are offering coverage
- Goal 3 - States continue to regulate

SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 7	
TOTAL POINT VALUE: 3	LEARNING OBJECTIVES: B2, B3
SAMPLE ANSWERS	
Part a: 1.5 points	
<p>1. Partnership with private insurers OR Cooperate with private insurers OR Public-private partnership <i>Any of the following were acceptable descriptions:</i></p> <ul style="list-style-type: none">• State Law prescribes the workers compensation benefits, but assigns to employers the responsibility for providing benefits.• The state government could decide the benefits to be provided by the companies• State defines coverage, private insurers write policies• State sets WC benefit levels, but doesn't operate their own insurer	
<p>2. Exclusive state funds OR Sole provider OR Sole insurer OR Monopolistic fund <i>Any of the following were acceptable descriptions:</i></p> <ul style="list-style-type: none">• Private insurers are not allowed to provide workers compensation only the state offers WC coverage• All insureds are required to purchase workers comp from the state	
<p>3. Competitor with private insurers OR Competitive state funds OR Direct Competitor <i>Any of the following were acceptable descriptions:</i></p> <ul style="list-style-type: none">• Employers can obtain the required work comp insurance either from the state or private insurers• Competes with insurers to provide WC insurance	
Part b: 1.5 points	
<p>1. <u>Partnership with private insurers</u> <i>Any of the following were acceptable descriptions:</i></p> <ul style="list-style-type: none">• Insured can obtain insurance from their current carrier for other coverages and maybe get better coverages.• Insured can pick the insurance company it wants that provides the best cost and services.• Insured can choose an insurance company but still be ensured to get standard benefits.• Because the state has prescribed workers compensation benefits, it can make the task of regulating insurers easier.	
<p>2. <u>Exclusive state funds</u> <i>Any of the following were acceptable descriptions:</i></p> <ul style="list-style-type: none">• With lower administrative costs they may reduce the cost of providing work comp to the industry	

SAMPLE ANSWERS AND EXAMINER'S REPORT

- Due to no need for marketing or acquisition costs, the state can pass those savings onto insureds.
- Since the state fund is solely focused on workers compensation, they may be able to offer more intensive levels of rehabilitation and other services.

3. Competitor with private insurers

Any of the following were acceptable descriptions:

- State funds are able to provide a stable source of affordable insurance coverage.
- The state insurer can help to drive premium levels down by competing for business with private insurers.
- Through competing with the private insurers, the state is able to offer an additional option for coverage.

EXAMINER'S REPORT

The candidates were expected to know the different ways a state government could participate in providing workers compensation insurance other than using residual markets. They were expected to describe the different ways of participation in part a and describe the benefits of those levels in part b.

Candidates were more likely to correctly describe monopolistic or competitive state funds than public/private partnership in parts a and b.

Part a

The candidates were expected to identify three levels of state government participation, excluding residual markets, and also describe what those levels mean. The participation needed to relate to providing workers' compensation coverage.

Common mistakes included:

- Did not provide descriptions to the identified levels of participation or did not list three levels of participation.
- Explained participation as Reinsurer, Reinsurer facilities, or pools
- Identified any federal programs, such as FECA, Longshore & Harbor, Black lung, Medicare, Medicaid, Social security
- Identifying a level of participation as "No involvement"
- Identifying a level or participation as a regulator
- Describing participation as assisted funds, insurer of last resort, or as a guaranty fund

Part b

The candidates were expected to identify a benefit for each of the three levels of state government participation and describe what that benefit was.

A common mistake was not providing a description.

- The following answers were not accepted without a description:
 - More innovation (for competitive)

SAMPLE ANSWERS AND EXAMINER'S REPORT

- Better expertise (for both exclusive and competitive)
- More efficient (for exclusive)
- More availability (for exclusive)
- Economies of scale (for exclusive)
- Simplified shopping (for exclusive)
- Meet a social need (for exclusive)

SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 8	
TOTAL POINT VALUE: 2.5	LEARNING OBJECTIVES: B1, B2
SAMPLE ANSWERS	
Part a: 0.5 point	
Any two of the following criteria:	
Sample Responses for "coverage amount is limited to the state's financial responsibility requirements"	
<ul style="list-style-type: none">• Often only offer minimum state required policy limits• Liability limits limited to financial responsibility limits	
Sample Responses for "collision Insurance only available with a high deductible"	
<ul style="list-style-type: none">• High collision deductibles• Collision coverage will usually have a high deductible	
Sample Responses for "premiums are substantially higher than average and above-average drivers"	
<ul style="list-style-type: none">• Higher prem's than low-risk and moderate risk drivers• Rates are higher in high-risk driver programs than regular voluntary market• Significantly higher than average premium	
Sample Responses for "medical payments coverage is limited"	
<ul style="list-style-type: none">• Medical payment is reduced (for the insured)• Typically have lower medical limit offerings• There may be limited medical coverage	
Sample Responses for "discounts for safe driving"	
<ul style="list-style-type: none">• High risk driver programs give discounts for going a certain period of time w/o a violation or accident	
Part b: 1 point	
Identify and fully describe one of the below automobile insurance residual market programs:	
Sample Responses for Assigned Risk or Automobile Insurance Plan:	
<ul style="list-style-type: none">• Assigned risk – insured applies for insurance and is rejected. Once they prove they are rejected and meet the requirements, they apply to assigned risk through broker. They are randomly assigned to insurance company (weighed by each company's market share). These companies handle claims as if they wrote this direct.• A residual program can be an Assigned Risk Plan. Under this plan, a high risk driver who has been rejected by an insurer applied to this plan and will be allocated an insurance company based on the insurance company market share in auto insurance. The insurance	

SAMPLE ANSWERS AND EXAMINER'S REPORT

will charge a premium that is determined by the state and will provide the servicing and handle all the claims from the policy. Losses will be borne by the company and will be subsidized by the experience of the pool of the insurer.

Sample Responses for Joint Underwriting Association:

- Joint Underwriting Association (JUA). Applicants apply to insurers, and are referred to the carrier of the program. Carrier is appointed by state. It processes the premiums and claims with fees. Loss/gains in the pool is shared by the participants based on their share of the voluntary market.
- JUA (Joint Underwriting Association) – Applicants sent to servicing carrier who issues policy, rates and forms set by JUA. Losses shared by all insurers in the state based on market share.

Sample Responses for Reinsurance Facility:

- Reinsurance facility: Insurer accepts all risks applied with valid driver's license. Insurer chooses which risks to cede to reinsurance facility. Insurer issues policies and handles claims. Insurer is reinsured by reinsurance facility. Profit/loss of the program is shared among insurers.
- The Reinsurance Facility – the policyholder applies for insurance with an insurer. The insurer decides whether to insure it or not insure it discreetly. If they decide not to insure it, they continue to service the policy but the profits and claims are reallocated to the market based on market share.

Sample Responses for Maryland State Fund:

- Maryland State Fund – for auto insurance, requires insurers in the state subsidize the cost of insurance for those in the fund and then can surcharge their own insureds to make up the difference.

Part c: 0.5 point

Sample Responses:

- FAIR attempts to provide affordable and adequate coverage to properties that are typically hard to insure, usually due to being in a community prone to riots and vandalism.
- In the 60s, riots caused property insurance premiums to increase in urban areas. FAIR plans aim to make property insurance available and affordable.
- The purpose of FAIR was to provide affordable coverages to insureds located in high-risk zones that the private market wasn't willing to write. Since most federally backed mortgages required homeowners insurance, the government stepped in to fill the void.
- FAIR plans are responsible for making sure that coverage is available and affordable for causes of loss such as windstorm in southeast U.S.
- Provide insurance coverage to properties in areas that are subject to hazards that make them unable to acquire coverage in the voluntary market.

Part d: 0.5 point

SAMPLE ANSWERS AND EXAMINER'S REPORT

Any two of the following:

Sample Responses for uninsurable exposures (interpreted as types of property):

- Properties that are vacant/open to trespass
- Properties that subject to poor housekeeping
- Poorly maintained homes
- Properties that are not in compliance with applicable laws of the state
- Homes that are already damaged
- Houses that do not follow the building codes
- Unsafe/hazardous conditions of the home which are not due to the environment

Sample responses for uninsurable exposures (interpreted as hazards):

- Flood – generally not considered insurable but coverage can be gotten from NFIP

EXAMINER'S REPORT

The candidates were expected to demonstrate knowledge of the origin and purpose of government and industry insurance programs, and the operations and risk transfer process of residual market programs.

A common mistake was reading part a as referring to involuntary rather than voluntary high-risk driver programs and then repeating the same responses in multiple subparts.

Part a

The candidates were expected to know common characteristics of high-risk driver programs in the voluntary market. Credit was given for listing at least two of the characteristics listed above.

Common mistakes included:

- Misreading “voluntary” as “involuntary”, and giving answers similar to those given for part b.
- Describing characteristics of the high risk drivers rather than characteristics of the program.

Part b

The candidates were expected to know automobile insurance residual market programs.

Credit was typically given for naming the program even if the name was not precise, for example “Automobile Risk Plan” when the name should be either “Assigned Risk Plan” or “Automobile Insurance Plan” as long as the description matched the imprecise name.

SAMPLE ANSWERS AND EXAMINER'S REPORT

Common mistakes included:

- Insufficiently describing the program or mixing descriptions of two different residual programs
- Not identifying the program being described (credit was still given for the description).

Part c

The candidates were expected to understand the purpose of FAIR plans and to describe exposures such as civil commotion or wind that are covered by the plans.

Common mistakes included:

- Generic descriptions such as “to meet an unmet need for insurance”, without clarifying what the need was or whose need was not being met
- Interpreting FAIR as an automobile residual market program

Part d

The candidates were expected to know what types of exposure could be considered uninsurable under most FAIR plans.

The reading used the term “exposure” to refer both to types of property and to hazards such as fire. Credit was given if the candidate interpreted exposure as a hazard such as flood that is not covered by FAIR. Credit was not given for describing hazards such as riot or civil commotion, or windstorm, which FAIR is intended to insure against.

The most common errors were:

- Describing types of automobile drivers
- Describing properties threatened by riot, civil commotion, brushfire, windstorm, as being uninsurable under FAIR
- Describing terrorism as an uninsurable peril

SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 9	
TOTAL POINT VALUE: 2.5	LEARNING OBJECTIVE: B3
SAMPLE ANSWERS	
Part a: 1 point	
<i>Sample Responses for Subpart (i):</i>	
<ul style="list-style-type: none">• How can FEMA balance the program's fiscal soundness and actuarial rates with the affordability of flood insurance? Avoid the unintended consequence of property owners having to drop their policies because the premiums are not affordable.• How can the nation reduce the escalating cost of flooding and need for taxpayer financed disaster assistance or weather induced catastrophic floods?• How to incentivize potentially at-risk property and business owners in coastal/floodplain counties to purchase flood insurance. Currently, residents who have a federally backed mortgage and live in a floodplain are required to have flood insurance; however, these individuals often do not purchase the mandatory coverage. Many at-risk property owners do not understand the risk or believe that flood insurance is not a good investment.• How can the private-sector's role be expanded in assuming NFIP flood risk? Transfer risk from insureds to primary to reinsurance and alternative capital markets.• Debt forgiveness. FEMA is obligated to repay the debt owed the Treasury and many analysts believe FEMA will not be able to repay the current debt.	
<i>Sample Responses for Subpart (ii):</i>	
<ul style="list-style-type: none">• Revised Analysis and Mapping. FEMA has agreed to assess and map residual risk below the 100-year standard that would give credit for levees that provide a level of protection less than the regulatory protection standard. However, there are inherent complexities and technical challenges in determining the risk and establishing a corresponding risk premium.• Development of an integrated disaster risk management approach. Given the similarity in coastal and riverine hazard risks and water resource management problems facing the nation Congress may wish for a comprehensive framework for risk perception, risk management and disaster strategy that go beyond floodplain development management.• Recent changes in weather patterns and increase in population density in coastal areas pose additional challenges in accurate assessment of flood risk and flood map upkeep. Candidates that also describe the difficulty of evaluating levee quality and effectiveness received credit.	
Part b: 1.5 points	
Any three of the following:	
<ul style="list-style-type: none">• Mandate NFIP charge rates that fully reflect flood risk. This would arguably discourage development in the most risky areas• Take actions to address the Repetitive Loss Property problem. Mandate that reconstructed property be elevated, flood-proofed or otherwise rebuilt to higher flood construction standards.• Buyouts. For repetitive loss properties benefiting from premium subsidies that refuse to	

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accept mitigation strategies, instead encourage voluntary buyouts of the property.

- Eliminate NFIP, eliminate moral hazard. Most owners of flood prone property opted to not purchase flood insurance, choosing to instead rely on federal disaster assistance to finance their recovery. The existence of NFIP creates moral hazard by lowering the incentive to mitigate loss. By no longer offering federal assistance the moral hazard would be eliminated. This would likely result in an incentive to favor property development in low-risk areas as an alternative.
- Increase NFIP program participation by enforcing the existing rules. Where mandatory flood insurance exists enforce the purchase requirement that coverage is maintained for the life of the loan. If owners of Property are required to participate and pay into the flood insurance program then building in high risk areas would be dis-incentivized. (King 22)
- Congress could make it illegal to build in flood zone
- Increase real estate taxation in the flood prone areas. High property taxes would discourage people from purchasing new homes in these areas, thus discouraging real estate development. In addition, increase taxes could be used to fund NFIP.
- Prohibit federal-backed mortgages for homes built in the flood prone areas. Lack of available funding will effectively discourage from buying and thus, building in these areas.

EXAMINER'S REPORT

The candidates were expected to understand objectives, effectiveness and operations of Federal Flood Insurance Program and demonstrate knowledge of program solvency, efficiency, stability, and viability.

Candidates were most familiar with the need to strengthen financial sustainability and actions congress could take to reduce real estate development. Candidates were not as familiar with issues around flood map accuracy.

Part a

Subparts (i) and (ii):

The candidates were expected to demonstrate knowledge of current (post-reform) issues and challenges faced by NFIP.

The candidates were expected to show understanding of inherent conflict between social goals of NFIP, such as affordability and availability of flood insurance, and the financial stability goals. This conflict ultimately led to adverse risk selection, lack of participation, and ultimately, to the tremendous financial debt of NFIP. Alternatively, a candidate could have demonstrated understanding of alternative solutions to the financial problem (such as involvement of private insurance in flood risk) and challenges in implementing such solutions.

Common mistakes included:

- Need for rate increase and existing of current rate increase cap of 20%, but not connecting it with NFIP goal of being affordable;

SAMPLE ANSWERS AND EXAMINER'S REPORT

- Some candidates simply stated “low participation” and “adverse selection” as challenges in obtaining the financial stability; however, these are already existing problems, so the real challenge is in how to address these issues – increase/encourage participation in flood insurance and to solve problem of adverse selection.
- Some of the candidates stated that the program will always be “unprofitable” due to the insufficient premiums charged.

These types of response do not demonstrate the conflict between social goals and financial goals of NFIP program, and thus were not awarded full credit.

For part (ii), the candidates were expected to understand current challenges in mapping and risk assessment or residual risk.

Common mistakes included:

- Candidates focused on past challenges, such as public back-lash to re-zoning of risk not previously considered to be in the flood zones, and public acceptance of this re-zoning.
- Candidates were mixing challenges in part (i) and (ii). For example, many candidates listed “unaffordability” as an issue arising out of mapping.
- Cost of mapping, lack of data, and lack of expertise were frequently used as answers to this question.
- Many candidates were not familiar with the material and simply left it blank.

Part b

The candidates were expected to demonstrate understanding of how Congressional actions could be used to reduce development in previously flooded areas high risk zones and thus reduce potential exposure in the program. Due to the nature of the question, many different types of responses were given full credit as long as they could reasonably be done by Congress as well as logically tie to reduced development.

Common mistakes included:

- Simply listing items rather than describing them or failing to connect a reasonable action to reduced development; many candidates lost partial credit because of this
- Some of the answers were more directed towards loss prevention, such as provide grants to update levee systems, however, this solution is not effective in answering the question of how to reduce real estate development in previously flooded areas.

The following common errors did not clearly result in a reduction in real estate development. To receive credit, the candidates would need to add a statement that logically connects the action to a reduction in real estate development.

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- Congress could encourage the offer of long-term flood insurance contracts (5, 10, 20 years) coupled with mitigation loans tied to the mortgage. This would arguably encourage investment risk measures by helping to finance the up-front costs associated with mitigation measures
- Community based pools or multi-peril private insurance policies which include flood coverage.

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QUESTION 10	
TOTAL POINT VALUE: 4	LEARNING OBJECTIVE: C1
SAMPLE ANSWERS	
Part a: 1.75 points	
<u>Sample Responses</u>	
$\text{IGR} = \frac{2015 \text{ Inv. Gain}}{\text{Mean [Loss Rx + UEP + Ceded Rein Payable + PHS - Agt's Bal.]}}$ $= \frac{5,025}{[21,300 + 16,785 + 700 + 29,600 - 3,950]} = .0779$	
Part b: 0.75 point	
<u>Sample Responses</u>	
$\text{Surplus Ratio} = \frac{\text{Mean PHS}}{[\text{Mean Loss Rx} + \text{Mean UEP} + 2015 \text{ EP}]}$ $= \frac{29,600}{[16,875 + 21,300 + 48,600]} = .341$	
Part c: 1.5 points	
<u>Sample Responses for sub-part (i)</u>	
<ul style="list-style-type: none"> • Benchmark expense ratios by LOB of competitors to see how efficiently their operations run. • Competitors might look to see in what LOB's the insurer is making a profit to decide if they want to expand in those lines in order to take advantage of some of the available profit. • Assess profitability and expense by LOB to determine how competitive rates are by LOB. 	
<u>Sample Responses for sub-part (ii)</u>	
<ul style="list-style-type: none"> • Rating Agencies can analyze this company's IEE by line of business to see if each line is profitable on a stand-alone basis and see if any line is subsidizing another. • RA's may look to see if a company is profitable in each LOB or only a couple to assess the overall strength of a company. • RA's can look at which segments (line) are profitable or not. If a company is focusing a lot of attention on a line with poor profits or high expenses the rating agency can discuss with management and investigate further. 	
<u>Sample Responses for sub-part (iii)</u>	
<ul style="list-style-type: none"> • Policyholders would prefer to be insured with companies with lower expenses so that they are getting lower rates. • Policyholders can see if the company is profitable in the LOB they are purchasing so they can identify solvency issues and if spotted may decide to change insurers. • Policyholders will use to see if insurer is earning excessive profits and justify complaints with DOI or identify financially strong insurers and place business with them 	
EXAMINER'S REPORT	

SAMPLE ANSWERS AND EXAMINER'S REPORT

The candidate was expected to demonstrate knowledge of the IEE, how the information contained within it is calculated, and how users of the IEE could use the IEE. Candidates found the calculation components easier than describing how different stakeholders use the IEE.

Part a

The candidates were expected to understand the concept of Investment Gain Ratio (IGR) is an integral part of the calculations used to prepare the IEE.

Common mistakes included:

- Omitting one of the items needed to correctly calculate the denominator.
- Including extraneous items in the calculation of the denominator.
- Using 2015 values for the items in the calculation instead of the mean value of 2014 and 2015.

Part b

The candidates were expected to calculate the surplus ratio used to allocate surplus in the IEE.

Common mistakes included:

- Providing all of the correct components (either by name or amount) that are associated with calculating the SR but not providing the actual ratio.
- Providing the process for calculating the amount of surplus that is allocated to each line of business, including the specific amounts, but not the actual Surplus Ratio.
- Using 2015 values where the mean value of 2014 and 2015 should have been used (or vice versa).

Part c

The candidates were expected to know what information is included in the IEE and how different stakeholders may use that information. This required candidates to understand the different interests and concerns for each stakeholder and how the IEE could be used to address those interests and concerns.

Common mistakes included:

- Reference to metrics that are not contained in the IEE (e.g. Policyholder Surplus, Capital)
- One or two word responses – the question asked the candidates to “Describe how a ...” and was graded accordingly.
- Not referring to a specific metric from the IEE

SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 11																																																															
TOTAL POINT VALUE: 2.5		LEARNING OBJECTIVE: C1																																																													
SAMPLE ANSWERS																																																															
Part a: 1.25 points																																																															
<p>Claims Closure Rate = (Reported Claims – Outstanding Claims) / Reported Claims = (Section 3 – Section 2) / Section 3</p> <p>Calculations:</p> <table border="1"> <thead> <tr> <th>2012</th> <th>2013</th> <th>2014</th> <th>2015</th> </tr> </thead> <tbody> <tr> <td>(460-90)/460</td> <td>(520-25)/520</td> <td>(515-10)/515</td> <td>(510-5)/510</td> </tr> <tr> <td></td> <td>(480-95)/480</td> <td>(580-25)/580</td> <td>(575-20)/575</td> </tr> <tr> <td></td> <td></td> <td>(460-90)/460</td> <td>(500-45)/500</td> </tr> <tr> <td></td> <td></td> <td></td> <td>(340-90)/340</td> </tr> </tbody> </table> <p>Completed Triangle (Schedule P Format):</p> <table border="1"> <thead> <tr> <th>2012</th> <th>2013</th> <th>2014</th> <th>2015</th> </tr> </thead> <tbody> <tr> <td>80.4%</td> <td>95.2%</td> <td>98.1%</td> <td>99.0%</td> </tr> <tr> <td></td> <td>80.2%</td> <td>95.7%</td> <td>96.5%</td> </tr> <tr> <td></td> <td></td> <td>80.4%</td> <td>91.0%</td> </tr> <tr> <td></td> <td></td> <td></td> <td>73.5%</td> </tr> </tbody> </table> <p>Or in non-Schedule P Format:</p> <table border="1"> <thead> <tr> <th>2012</th> <th>2013</th> <th>2014</th> <th>2015</th> </tr> </thead> <tbody> <tr> <td>80.4%</td> <td>95.2%</td> <td>98.1%</td> <td>99.0%</td> </tr> <tr> <td>80.2%</td> <td>95.7%</td> <td>96.5%</td> <td></td> </tr> <tr> <td>80.4%</td> <td>91.0%</td> <td></td> <td></td> </tr> <tr> <td>73.5%</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>				2012	2013	2014	2015	(460-90)/460	(520-25)/520	(515-10)/515	(510-5)/510		(480-95)/480	(580-25)/580	(575-20)/575			(460-90)/460	(500-45)/500				(340-90)/340	2012	2013	2014	2015	80.4%	95.2%	98.1%	99.0%		80.2%	95.7%	96.5%			80.4%	91.0%				73.5%	2012	2013	2014	2015	80.4%	95.2%	98.1%	99.0%	80.2%	95.7%	96.5%		80.4%	91.0%			73.5%			
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<u>Sample 1</u>																																																															
Claim closure rates have decreased in calendar year 2015 across all accident years.																																																															
Possible causes for trend:																																																															
<ul style="list-style-type: none"> Reduction in claims department staffing levels 																																																															

SAMPLE ANSWERS AND EXAMINER'S REPORT

- Management actively focusing on larger, more complex claims instead of small claims.
- Inefficiency of claim process due to high turnover in claims department
- Implementation of new claim procedure, technique, or technology
- Regulatory or legal change that hinders claim closure
- Change in policy language making claims settling more complicated
- Shift from company adjusters to independent adjusters
- Catastrophic event occurring that causes claims staff backlog
- Shift towards more vigorous defense of suits
- Change in data coding procedure
- Insurer may be distressed and deliberately leaving claims open longer
- Change of mix of business within specific schedule P line of business

Part c: 0.5 point

Sample 1

The loss development patterns from historical years will be low compared to how claims are closing in accident year 2015. If historical LDFs are applied to current claims, the ultimate projected claims will be underestimated.

Sample 2

If a frequency/severity method is used and historical frequency development patterns are applied to the latest frequencies, which are depressed relative to historic levels, then the ultimate frequency of unpaid claims will be underestimated.

Sample 3

If claims department is actively focusing on closing large claims sooner, paid loss numbers would be inflated at early ages. These paid loss amounts would have LDFs applied that are based on a historical period where the claims department is not focusing on large losses early. The historical LDFs would be too high based on the current paid loss strategy and would overestimate ultimate unpaid loss.

EXAMINER'S REPORT

The candidates were expected to use a company's schedule P data to provide a claims closure rate table while also interpreting the possible causes and ramifications of the results.

Part a

The candidates were expected to construct a triangle showing the ratio of all closed claims to reported claims using the schedule P data provided.

A common mistake was using the claims closed with payment triangle. Some candidates simply

SAMPLE ANSWERS AND EXAMINER'S REPORT

used (Section 1 / Section 3) which is incorrect due to the question asking for the ratio of all closed claims to reported claims.

Part b

The candidates were expected to identify a trend in the closure rates while also identifying possible causes for that trend. If an error was made in part a, the results were carried through to part b without additional penalty, even if part a showed a claim closure rate increase.

Common mistakes included:

- Stating only that the closing of claims was slowing down without any additional information
- Discussing change in lines of business for cause of trend. Schedule P is specific to LOB. Credit was given for stating a mix change within a line of business.

Part c

The candidates were expected to explain how the change in claim closure rates would affect an actuary's unpaid claim estimate.

The most common errors were:

- Incorrectly stating whether the change in claim closure rates would overestimate or underestimate the unpaid claim estimate
- Stating that the actuary's estimate would be affected or incorrect but not making a determination of whether it would be too high or too low

SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 12

TOTAL POINT VALUE: 2.5

LEARNING OBJECTIVE: C1

SAMPLE ANSWERS

Sample 1

Unpaid at 12/31/2014 = Incurred Loss Part 2K - Cumulative Paid Losses Part 3K

Year	2013	2014
Prior	50	75
2013	200	600

Year	2013	2014
Prior	= 500 - 450	= 550 - 475
2013	= 800 - 600	= 1,300 - 700

Unpaid at 12/31/2015 = Unpaid at 12/31/2014 + Unpaid at 12/31/2015

Year	2013	2014	2015
Prior	250	675	50

Year	2013	2014	2015
Prior	= 50 + 200	= 75 + 600	= 15 + 35

Paid at 12/31/2015 - Paid at 12/31/14 (excluding 2013 paid) + CY Paid in 2015

Year	2013	2014	2015
Prior	0	125	165

Year	2013	2014	2015
Prior	= 0	= (475 - 450) + (700 - 600)	= (475 - 450) + (700 - 600) + 10 + 30

Part 2 Incurred at 12/31/15 = Paid at 12/31/15 + Unpaid at 12/31/15

Year	2013	2014	2015
Prior	250	800	215

Year	2013	2014	2015
Prior	= 250 + 0	= 675 + 125	= 50 + 165

Sample 2

Unpaid at 12/31/2014 = Incurred Loss Part 2K - Cumulative Paid Losses Part 3K

SAMPLE ANSWERS AND EXAMINER'S REPORT

Year	2013	2014
Prior	50	75
2013	200	600

Year	2013	2014
Prior	= 500 - 450	= 550 - 475
2013	= 800 - 600	= 1,300 - 700

Unpaid at 12/31/2015 = Unpaid at 12/31/2014 + Unpaid at 12/31/2015

Year	2013	2014	2015
Prior	250	675	725*

Year	2013	2014	2015
Prior	= 50 + 200	= 75 + 600	= 75 + 675 + 15 + 35

*Assuming the provided 15 and 35 unpaid loss and DCC amounts represent the change in unpaid and not the unpaid amounts at year end.

Paid at 12/31/2015 - Paid at 12/31/14 (excluding 2013 paid) + CY Paid in 2015

Year	2013	2014	2015
Prior	0	125	165

Year	2013	2014	2015
Prior	= 0	= (475 - 450) + (700 - 600)	= (475 - 450) + (700 - 600) + 10 + 30

Part 2 Incurred at 12/31/15 = Paid at 12/31/15 + Unpaid at 12/31/15

Year	2013	2014	2015
Prior	250	800	890

Year	2013	2014	2015
Prior	= 250 + 0	= 675 + 125	= 725 + 165

Sample 3

Incurred @ 12/31/2013 for a 2015 statement

$$250 = (500 - 450) + (800 - 600) + 0$$

Incurred @ 12/31/2014 for a 2015 statement

$$800 = (550 - 475) + (1300 - 700) + (475 - 450) + (700 - 600)$$

SAMPLE ANSWERS AND EXAMINER'S REPORT

Incurring @ 12/31/2015 for a 2015 statement
 $215 = (15 + 35) + (125 + 10 + 30)$

Sample 4

Incurring @ 12/31/2013 for a 2015 statement
 $250 = (500 - 450) + (800 - 600) + 0$

Incurring @ 12/31/2014 for a 2015 statement
 $800 = (550 - 475) + (1300 - 700) + (475 - 450) + (700 - 600)$

Incurring @ 12/31/2015 for a 2015 statement
 $890 = (550 - 475) + (1300 - 700) + (15 + 35) + (125 + 10 + 30)$

*Assuming the provided 15 and 35 unpaid loss and DCC amounts represent the change in unpaid and not the unpaid amounts at year end.

Sample 5

Incurring @ 12/31/2013 for a 2015 statement
 $250 = (500 - 450) + (800 - 600) + 0$

Incurring @ 12/31/2014 for a 2015 statement
 $800 = 250 + (550 - 500) + (1300 - 800)$

Incurring @ 12/31/2015 for a 2015 statement
 $215 = 800 - (600 + 75) + (15 + 35) + (10 + 30)$

Sample 6

Incurring @ 12/31/2013 for a 2015 statement
 $250 = (500 - 450) + (800 - 600) + 0$

Incurring @ 12/31/2014 for a 2015 statement
 $800 = 250 + (550 - 500) + (1300 - 800)$

Incurring @ 12/31/2015 for a 2015 statement
 $890 = 800 + (15 + 35) + (10 + 30)$

*Assuming the provided 15 and 35 unpaid loss and DCC amounts represent the change in unpaid

SAMPLE ANSWERS AND EXAMINER'S REPORT

and not the unpaid amounts at year end.

EXAMINER'S REPORT

The candidates were expected to know how to calculate the prior year in Schedule P.

The question provided Unpaid Loss & DCC information for 2015 as of December 31, 2015. Some candidates misinterpreted the information to be the change in unpaid. If a candidate provided an assumption stating the data represented the change in unpaid and the answers calculated match Sample 2, 4, or 6 above, the candidate received full credit.

Common mistakes included:

- Candidates did not add the prior and 2013 rows from the 2014 Schedule P
- Candidates did not add both the prior and 2013 paid (10 + 30) and unpaid (15 + 35) amounts together when calculating the prior year row as of 2015
- Candidates relied on the 2015 paid (625) and unpaid (300) amounts provided in question when calculating the prior year row as of 2015

SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 13	
TOTAL POINT VALUE: 3.75	LEARNING OBJECTIVE: C1
SAMPLE ANSWERS	
Part a: 2.75 points	
<u>Sample 1</u>	
Reinsurer A:	
Authorized, so determine if slow paying or not:	
Test Ratio = (Recoverable on Paid > 90 days overdue) / (Total Recoverable on Paid + Amounts Received Prior 90 days)	
= (16+4)/(90+15) = 19% < 20%, therefore Reinsurer B is not slow-paying.	
Provision = 20% * (Recoverable on Paid > 90 days overdue) = 20%*(20) = 4	
Check that result is less than total recoverable: 4 < 115 OK	
Reinsurer B:	
Unauthorized provision:	
Provision = (Unsecured Recoverable) + Min(Offsets, 20%*Recov > 90 days overdue) + Min(Offsets, 20%*Amounts in Dispute)	
= (140-40) + Min(40, 20%*(7+3)) + Min(40, 20%*8)	
= 100+2+1.6 = 103.6	
Check that result is less than total recoverable: 103.6 < 140 OK	
Total Provision for Reinsurance = 4 + 103.6 = 107.6	
<u>Sample 2</u>	
<i>Slightly different formula for Unauthorized Reinsurer that matches the latest Schedule F. Resulting answer is the same.</i>	
Reinsurer B:	
Unauthorized provision:	
Provision = (Unsecured Recoverable) + 20%*(Recoverable on Paid > 90 days overdue exclude disputes) + 20%*(Amounts in Dispute)	
= (140-40) + 20%*(7+3) + 20%*8 = 100+2+1.6 = 103.6	
Check that result is less than total recoverable: 103.6 < 140 OK	

SAMPLE ANSWERS AND EXAMINER'S REPORT

Part b: 1 point

Any two of the following

- The provision for reinsurance is strictly formulaic, potentially masking the true estimate of uncollectible reinsurance by company management.
- The provision for reinsurance formula has no statistical, historical, or actuarial basis and so its application may not adequately represent collectability risk.
- Unauthorized reinsurance may provide more and/or higher quality reinsurance at a lower price than a competing authorized reinsurer, but the high provision for unauthorized reinsurance could discourage purchasing it.
- Slow payers who are financially strong may be more likely to pay than a reinsurer who is current in its payments but may not be able to withstand a stress scenario to its financials. Hence, the charge may be over-stated for slow payers and under-stated for non-slow payers.
- There are numerous calculations involved in determining the provision for reinsurance, which can lead to a false level of precision in the collectability risk.
- The costs associated with the collateral requirements may be passed down to the primary policy, thereby costing the policyholder more for insurance.
- The high penalty for unauthorized reinsurers can limit competition to the U.S. market.
- There is no discussion of the adequacy of the reinsurance coverage purchased to protect the insurance company in the event of an adverse scenario such as a weather catastrophe event.
- It is a retrospective measure; does not consider the collectability of reinsurance recoverables on a prospective basis.
- The 20% threshold for slow paying authorized reinsurer is arbitrary. There is not a significant difference in collectability from an authorized reinsurer with a 19.9% ratio and one with a 20.0% ratio, but has a sizable impact on the provision.
- Actual historical experience in terms of uncollectable reinsurance is not here. If the insurer has a history of write-offs with the reinsurer, they are more likely not to pay in the future.
- The slow pay ratio threshold of 20% may motivate disputes between ceding insurer and reinsurer because disputes are excluded from that formula.
- The risk in the line of business reinsured is not considered in the provision formula. Thus it is possible that the authorized reinsurer reinsures a highly volatile exposure which could lead to a higher likelihood of insolvency of the reinsurer, which affects the solvency of the insured.
- Subject to manipulation. The insurer could be aggressive with booking paid recoverables to make a reinsurer not "slow paying" thus lowering the provision.

SAMPLE ANSWERS AND EXAMINER'S REPORT

EXAMINER'S REPORT

The candidates were expected to calculate the provision for reinsurance and describe two criticisms of schedule F.

Part a

The candidates were expected to calculate the provision of reinsurance for an authorized and unauthorized reinsurer.

Common mistakes included:

- Reinsurer A's Provision
 - Using total recoverables (115) instead of total paid recoverables (90) in the slow paying ratio
- Reinsurer B's Provision
 - After calculating reinsurer B's provision taking the minimum of that value and total unsecured recoverables $\min(140 - 40, 103.6) = 100$
 - Subtracting disputed values from total unsecured recoverables $(140 - 40 - 8) = 92$
 - Not adding 20% of disputed values for the provision
 - Did not utilize assumptions stating in the question around disputed amounts

Part b

The candidates were expected to identify issues with Schedule F and describe the impact of those issues. Most candidates could identify issues with schedule F, but would often lack the impact of those issues.

Common mistakes included:

- Giving the issues without stating the impact on schedule F / provision / solvency
- Discussing solvency issues without direct ties to schedule F

SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 14															
TOTAL POINT VALUE: 3.25	LEARNING OBJECTIVE: C1, C2														
SAMPLE ANSWERS															
Part a: 2.25 points															
<p>2015</p> <p>UW Profit = $57550 - 40050 - 16000 = 1500$</p> <p>Other Income = $-450 - 25 = -475$</p> <p>Investment Gain = $3450 + 65 = 3515$</p> <p>Net Income = $1500 - 475 + 3515 = 4540$</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2">Change in PHS</td> </tr> <tr> <td style="padding-left: 20px;">Net Income</td> <td style="text-align: right; padding-right: 20px;">4540</td> </tr> <tr> <td style="padding-left: 20px;">change in unrealized gains</td> <td style="text-align: right; padding-right: 20px;">100</td> </tr> <tr> <td style="padding-left: 20px;">change in non-admitted assets</td> <td style="text-align: right; padding-right: 20px;">35</td> </tr> <tr> <td style="padding-left: 20px;">change in provision for reinsurance</td> <td style="text-align: right; padding-right: 20px;">15</td> </tr> <tr> <td style="padding-left: 20px;">Dividends to stockholders</td> <td style="text-align: right; padding-right: 20px;">(200)</td> </tr> <tr> <td style="padding-left: 20px;">Total</td> <td style="text-align: right; padding-right: 20px; border-top: 1px solid black;">4490</td> </tr> </table> <p>Assuming tax on DTA & DTL = 0%</p> <p style="padding-left: 20px;">Policyholder surplus = $82000 + 4490 = 86490$</p> <p>Assuming tax on DTA & DTL = 35%</p> <p style="padding-left: 20px;">Policyholder surplus = $82000 + 4490 + (-.35)(100) = 82000 + 4490 - 35 = 86455$</p> <p>Credit was awarded for either tax assumption.</p>		Change in PHS		Net Income	4540	change in unrealized gains	100	change in non-admitted assets	35	change in provision for reinsurance	15	Dividends to stockholders	(200)	Total	4490
Change in PHS															
Net Income	4540														
change in unrealized gains	100														
change in non-admitted assets	35														
change in provision for reinsurance	15														
Dividends to stockholders	(200)														
Total	4490														
Part b: 1 point															
<u>Sample Responses for "one argument for"</u>															
<ul style="list-style-type: none"> • PHS has increased from 82k to 86455 which means the insurer has more surplus to cover adverse events like Cat events or adverse prior year reserve development. Thus making the company more financially sound. • The provision for reinsurance decreased which could imply that they are exposed to less credit risk and are therefore more financially sound. 															
<u>Sample Responses for "one argument against"</u>															
<ul style="list-style-type: none"> • IRIS ratio 2, net written premium / surplus, has increased (from 91 to 98), moving closer to the unacceptable/atypical range; this means that even though surplus increased, the company is taking on relatively more risk overall than it was before, so it may be or 															

SAMPLE ANSWERS AND EXAMINER'S REPORT

become less financially sound than it was at year-end 2014.

- The loss ratio actually got worse, from 65.6% to 69.6%. Coupled with the fact that they are writing more business, there may be much more loss that hasn't come on the books yet.
- Investment income went down but unrealized gain went up. This might indicate they are carrying more less-liquid assets.

EXAMINER'S REPORT

The candidates were expected to demonstrate a working understanding of the accounting required to calculate the Capital and Surplus Account on the Statement of Income of the annual statement, and to evaluate the financial health of an insurance entity based on the financial information provided.

Part a

The candidates were expected to determine policyholder surplus by calculating the underlying components.

Common mistakes included:

- Failure to include an item from the calculation of net income.
- Failure to include an item representing a change in a balance sheet item.
- Treating an income sheet item like a balance sheet item (or visa-versa) in calculating the change to surplus (for example, adding the current year's unrealized capital gains to surplus, instead of adding the change in unrealized capital gains to surplus).
- Calculating the change in the wrong direction.
- Failing to copy numbers correctly, and calculating sums and subtractions correctly.

Part b

The candidates were expected to analyze the financial position of an insurance company and describe how the results can imply both positive and negative changes.

Common mistakes included:

- Most candidates provided very simple observations such as "Surplus went up." This, by itself, is not a complete explanation or argument.
- Candidates reported an increase in net premiums written, by itself, indicated a weakened financial position.
- Candidates reported that the decline in federal income taxes was a sign that the company was in a weaker position.
- Some candidates referred to changes in gross premiums written, and changes in loss reserves as if they had that information available to them, but they did not.
- Some candidates reported a decrease in the Provision for reinsurance indicated that the company was in a weaker financial position. These candidates ignored the decrease in credit risk. They attributed the weaker position to less reinsurance protection. Since this was speculative, we did not give credit for this answer.

SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 15	
TOTAL POINT VALUE: 3.75	LEARNING OBJECTIVE: C2
SAMPLE ANSWERS	
Part a: 2.25 points	
<p>Developed Loss & LAE Reserve Ratio (2nd Prior Year) = $(135,000 + (159,000+148,000 + 139,000) - (126,000 + 136,000 + 141,000)) / 178,000 = 100.0\%$</p> <p>Developed Loss & LAE Reserve Ratio (Prior Year) = $(176,000 + (202,000 + 159,000 + 148,000 + 139,000) - (133,000 + 144,000 + 147,000 + 185,000)) / 237,000 = 90.7\%$</p> <p>Average Reserve Ratio = $\frac{1}{2} \times (100.0\% + 90.7\%) = \boxed{95.4\%}$</p> <p>Estimated Loss & LAE Reserves Required = Average Reserve Ratio x Current EP $= 95.4\% \times 325,000$ $= \boxed{309,916}$</p> <p>Indicated Deficiency (Redundancy) = Estimated Reserves – Held Reserves $= 309,916 - 215,000$ $= \boxed{94,916}$ <i>deficiency</i></p> <p>IRIS 13 = Indicated deficiency (redundancy) / Current Year PHS $= 94,916 / 211,000$ $= \boxed{45.0\%}$</p> <p>Value is greater than 25%, so an unusual value. ~~~~~</p> <p>Alternate calculation of prior year loss development also received full credit: Candidates could calculate prior year loss development by 188×0.207 instead of $(202,000 + 159,000 + 148,000 + 139,000) - (133,000 + 144,000 + 147,000 + 185,000)$.</p> <p>Candidates could calculate 2nd prior year loss development by 168×0.256 instead of $(159,000+148,000 + 139,000) - (126,000 + 136,000 + 141,000)$.</p>	
Part b: 0.5 point	
<p>Any two of the following:</p> <ul style="list-style-type: none"> • Significant changes in premium volume • Changes in product mix (property & liability) • Surplus aid from reinsurance • Reserve strengthening/weakening • Change in reserving philosophy • Reinsurance commutation 	

SAMPLE ANSWERS AND EXAMINER'S REPORT

Part c: 1 point

Any two of the following:

- Increasing ratios 11 & 13 – test with LOB IRIS ratio analysis
- Ratio 12 consistently greater than Ratio 11 indicating potential for intentionally understated reserves- (do additional one of the analyses below)
- IRIS 12 unusual for 2 years – analyze collectability of reinsurance
- IRIS 13 unusual – test with Ratio 3 for premium changes
- IRIS 7 (Change in PHS) is usual- check net income with IRIS 5 (2 yr operating ratio) or changes in surplus aid

Additional acceptable analysis included:

- Review the Ratios by line of business
- Review Notes to Financial Statements
- Look at Schedule P
- Review the 5 Year Historical Exhibit
- Review the SAO
- Interview management about reserving changes like strengthening or weakening
- Review commutations
- Review reinsurance for adequacy
- Study the IEE regarding the growth/profit by LOB by product

EXAMINER'S REPORT

The candidates were expected to calculate IRIS Ratio 13, identify possible distortions in IRIS Ratio 13, and identify two analyses an actuary might complete in response to the observed IRIS Ratio results. The calculation portion of this question is demonstrated directly in the syllabus text. The commentary on IRIS ratios is also clearly explained in the syllabus text. Part c required some application that is not provided in list form in the syllabus.

Part a

The candidates were expected to be able to do the IRIS 13 calculation and comment on the results.

Common mistakes included:

- Forgetting to include development on prior year reserves
- Calculating prior year reserve development incorrectly
- In calculating the average reserve ratio, adding the numerators of the two fractions and dividing by the sum of the denominators instead of taking the average of the two fractions
- Multiplying the average reserve ratio by something other than the current year EP
- Not indicating whether the ratio was in the usual range.

Part b

SAMPLE ANSWERS AND EXAMINER'S REPORT

The candidate was expected to be able to identify ways in which IRIS Ratio 13 could be distorted.

Common mistakes included:

- Not giving enough detail, as we did not give credit for answers like “reinsurance”, “surplus”, or “a catastrophe”.
- EP not leveled or trended “premium adequacy”
- Change in pooling % This is an error because Schedule P’s history is restated so this change by itself will not have an unusual impact on the ratio
- Focusing on exposures rather than reserves.
- Growing EP will lead to higher expected reserves
- Uncollectable reinsurance
- Emergence of asbestos and environmental claims
- Misstatement of reserves
- Inadequate reserves in prior years
- Repeating the same information twice

Part c

The candidate was expected to be able to comment on IRIS ratios and identify additional analyses.

Common mistakes included:

- Giving answers like “Reserves are increasing” that are not based on the IRIS ratios.
- Calculating IRIS 3, using the EP given instead of the WP required.
- Explaining what might be causing the anomalies instead of identifying additional analyses.

SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 16	
TOTAL POINT VALUE: 2.5	LEARNING OBJECTIVE: A2, C2
SAMPLE ANSWERS	
Part a: 1 point	
Any two of the following:	
Risk Categories and Descriptions – Life RBC formula	
<ul style="list-style-type: none">• C1 – Asset Risk: represents risks associated with an insurance company's investments and other recoverable-based assets. It considers the risk that a bond issuer will not make the required interest or principal repayments (default risk) or that the value of the asset will be substantially impaired due to changes in interest rates or financial market conditions.• C2 – Insurance/Underwriting Risk: represents the risk associated with the issuance of insurance policies. It is analogous to underwriting risk in the P&C industry. It represents the risk that claims emerge greater than expected due to inadequate pricing or random variation.• C3 – Interest Rate Risk: represents the risk that interest rates will change and result in a mismatch between assets and liabilities.• C4 – Business Risk: intended to capture other risks inherent in an insurance company's operations. For life insurance companies, the business risk charge within RBC considers the risk of financial loss from litigation and guarantee fund assessments. Both impact a life insurance company's expenses.	
Risk Categories and Descriptions – P&C RBC formula	
<ul style="list-style-type: none">• R0 – Asset Risk – Subsidiary insurance companies: considers default risk associated with investments in affiliated insurance companies.• R1 – Asset Risk – Fixed income: considers changes in interest rates and potential default of fixed income investments.• R2 – Asset Risk – Equity: considers changes in asset valuations for non-fixed income investments (stocks, real estate).• R3 – Asset Risk – Credit: credit risk associated with receivables on the balance sheet as well as risk associated with reinsurance recoverables. Contemplates risk that the counterparty will default and the risk associated with estimating the amounts recorded for counterparty recoverables.• R4 – Underwriting Risk – Reserves: concerned with past business, risk that the company's recorded loss and LAE reserves will develop adversely• R5 – Underwriting Risk – New written premium: future business, risk that one year's worth of the company's future business will be unprofitable/risk that the premiums will not be able to cover losses	
Part b: 0.5 point	
Any two of the following:	
<ul style="list-style-type: none">• The purpose of RBC is to help regulators identify insurers that are in financial trouble and that need regulatory attention/early warning sign	

SAMPLE ANSWERS AND EXAMINER'S REPORT

- Therefore, the RBC requirements attempt to individualize minimum capital requirements for each insurer.
- RBC allows or mandates a regulator to take action when a company reaches a certain RBC action level.

Part c: 1 point

Any two of the following

- Simple to apply and understand
- Responsive to actual history and underlying risk
- Easily reproducible by future practitioners
- Statistically relevant
- Resulting in indications that could be adopted without disruptive swings in required capital for regulated companies
- RBC is already in use
- Regulators can take corrective action
- Uniform/able to compare across companies
- Objective
- Difficult to manipulate
- Charges higher amounts for riskier investments

Any two of the following:

- The NAIC has indicated that a universal target capital level and/or specified time horizon across all business is not feasible.
- The NAIC believes these target levels should be different for type/line of business due to inherently different risks.
- The NAIC believes these target levels should be different for type/line of business due to credibility issues around developing distributions that make the validation of safety levels difficult.
- Doesn't capture all types of risk for example catastrophe risk
- Doesn't take into account management decisions/business plans & strategy/internal controls
- Doesn't take into account rate adequacy/reserve adequacy
- Not a complex model/doesn't use stochastic modeling/uses arbitrary factors/not actuarially justified factors
- Difficult to compare to foreign insurers/those that do not use RBC
- Gives insurers a false sense of security
- RBC is a minimal capital level, does not assume a worst case scenario
- Promotes the understating of reserves

EXAMINER'S REPORT

The candidates were expected to know the risk categories of Risk Based Capital (RBC), purposes of RBC, and advantages and disadvantages of using RBC. This question combined learning objectives A2 and C2.

SAMPLE ANSWERS AND EXAMINER'S REPORT

Part a

The candidates were expected to know two major risks categories measured by the RBC formula. Note that the question did not specify the life or property/casualty calculation so all answers were accepted that referred to either/or.

Common mistakes included:

- Including investment risk as one of the risk categories
- Not briefly describing the risk categories and instead just including the components of Asset Risk or Underwriting Risk
- Stating the Reserve Risk measured adequacy of reserves

Part b

The candidates were expected to know the purpose of RBC from the perspective of the regulator.

Common mistakes included:

- Not responding from the regulator's perspective
- Giving the definition of RBC
- Providing only one response

Part c

The candidates were expected to give two arguments in favor and two arguments against using the RBC formula to calculate a universal target capital level.

Common mistakes included:

- Not being specific in their responses such as "RBC uses factors that may not be good for certain insurers" or "RBC is formulaic and does not account for all risk"
- Stating that interest rate risk is not included in RBC as an argument against, but this is included in the RBC calculation.
- Stating that RBC was easily manipulated and complex but it is a simple calculation and not easy to manipulate.

SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 17	
TOTAL POINT VALUE: 1.75	LEARNING OBJECTIVE: C2
SAMPLE ANSWERS	
Part a: 1 point	
<p><u>Sample 1</u></p> <p>RBC = $10 + \text{SQRT}(16+25+4+225+400) = \\35.88M Authorized Control Level = $\\$35.88\text{M} \times 0.5 = \\17.942M Adjusted Capital = PHS – NonTabular Discount – Tabular Medical Discount = $20-3-2=\\$15\text{M}$ RBC Ratio = Adjusted Capital / ACL = $15.0 / 17.942 = 0.836$</p> <p><u>Sample 2</u></p> <p>RBC = $10 + \text{SQRT}(16+25+4+225+400) = \\35.88M Authorized Control Level = $\\$35.88\text{M} \times 0.5 = \\17.942M Assume there is no such thing as Tabular Medical Discount Adjusted Capital = PHS – NonTabular Discount = $20-2=\\$18\text{M}$ RBC Ratio = Adjusted Capital / ACL = $18.0 / 17.942 = 1.003$</p>	
Part b: 0.25 point	
<p>Part b was graded using the result calculated in part a. Full credit was awarded when the correct action level was identified for the RBC ratio calculated in a.</p> <p>If $a > 2$, then no action If $1.5 < a < 2$, then company action level If $1 < a < 1.5$, then regulatory action level If $0.7 < a < 1$, then authorized control level If $a < 0.7$ mandatory control level</p>	
Part c: 0.5 point	
<p>Part c was graded based on the action level identified in part b:</p> <p>If part b identified company action level</p> <ul style="list-style-type: none"> • The company must submit an action plan on how to improve the capital position or reduce risks; the regulator has no required actions <p>If part b identified regulatory action level:</p> <ul style="list-style-type: none"> • The company must submit an action plan on how to improve the capital position or reduce risks; the regulator has the authority to take corrective actions such as restricting new business, but it is not required. <p>If part b identified authorized control level:</p> <ul style="list-style-type: none"> • The company has no actions; the regulator has the authority to take control of the 	

SAMPLE ANSWERS AND EXAMINER'S REPORT

company, but it is not required.

If part b identified mandatory control level:

- The company has no actions; the regulator must take control of the company to prepare for liquidation

EXAMINER'S REPORT

The candidates were expected to calculate the RBC ratio and describe the resulting regulator and company actions. This topic is frequently covered on prior exams, with a sample question directly out of the text. Formulas were directly pulled from the paper; table of levels action required was also in paper.

Part a

The candidates were expected to calculate RBC, Authorized Control Level, Adjusted Capital, and RBC Ratio. Examples of each calculation are provided directly in the syllabus material. The discounting of the surplus was more difficult, especially the handling of tabular medical discount. Full credit was given for two versions of discounted surplus.

Common mistakes included:

- Failure to discount properly
- Moving $\frac{1}{2}$ of R3 to R4 unnecessarily
- Inverse the ratio
- Not remembering to multiply $\frac{1}{2}$ to the RBC

Part b

The candidates were expected to name the action level.

Common mistakes included:

- Not using the right word 'action vs control' in the description of the level
- Not recalling the correct level

Part c

The candidates were expected to name the correct action from regulator and company from the action level:

Common mistakes included:

- Confusing regulatory action vs authorized control actions
- Not being precise in the use of 'regulator has authority to take control' vs 'regulator must take control'

SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION: 18				
TOTAL POINT VALUE: 3.75			LEARNING OBJECTIVE: C3	
SAMPLE ANSWERS				
Part a: 3.25 points				
<u>Sample 1</u>				
	2017	2018	2019	2020
Inc. Payments	100	60	40	0
Unpaid year start	200	100	40	0
Unpaid year end	100	40	0	
Avg. unpaid	150	70	20	
Required Capital	75=150*0.5	35	10	
Cost Capital	4.5=75*(9%-3%)	2.1	0.6	
PV payments	98.53=100/(1.03)^0.5	57.4	37.15	
PV cost capital	4.37=4.5/(1.03)^1	1.98	0.55	
Fair value liability=98.53+57.4+37.15+4.37+1.98+0.55+70=270				
Goodwill=11-(280-270)=1				
<u>Sample 2</u>				
Discounted Loss and LAE payments = $\frac{100}{(1.03)^{0.5}} + \frac{60}{(1.03)^{1.5}} + \frac{40}{(1.03)^{2.5}} = 193.08$				
	1	2	3	
Required Capital	75=(200+100)*0.5	35	10	
R-i applied to capital	4.6=75*(0.09-0.03)	2.1	0.6	
Discount to capital	1.03^(-1)	1.03^(-2)	1.03^(-3)	
Total=6.9				
Fair value liability for Loss and LAE =193.08+6.9 = 200				
Total value of Liability = 200+70 =270				
Fair value of Asset = 280				
Goodwill=11-(280-270)=1				
Part b: 0.5 point				
<u>Sample 1</u>				

SAMPLE ANSWERS AND EXAMINER'S REPORT

- Goodwill under SAP is purchase price less surplus of acquired entity
- It is amortized over the time the acquiring company benefits from the purchase, up to 10 years

Sample 2

- Under SAP, goodwill is the difference between purchase and policyholder surplus.
- Goodwill is amortized to unrealized gains for a period of no more than 10 years

EXAMINER'S REPORT

The candidates were expected to understand the details of the difference between GAAP and SAP in Goodwill and how the fair value of claims liabilities, including risk margins is calculated.

This question tests subject matter that has not been heavily tested in the past and requires detailed knowledge of GAAP principles. Candidates were more familiar with the description of Goodwill calculation under SAP than the numeric calculation of GAAP.

Part a

The candidates were expected to know how the Goodwill is calculated under GAAP using the Cost of Capital Approach.

Common mistakes included:

- 2% discount instead of 3% (forget illiquidity premium)
- Capital equals 50% of payments instead of average unpaid balance
- Capital equals 50% of BOY unpaid balance
- Cost of capital of 9% instead of 6%
- Used GAAP asset value instead of fair value
- Goodwill equals net fair value less purchase price rather than reverse.

Part b

The candidates were expected to briefly describe how goodwill is calculated and amortized under SAP.

Common mistakes included:

- PHS less purchase price rather than reverse
- Fair value of net assets instead of PHS
- Forgot 10 year limit on amortization

SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 19	
TOTAL POINT VALUE: 3.25	LEARNING OBJECTIVE: C4
SAMPLE ANSWERS	
Part a: 1 point	
<p>i. Dividends received from corporation owned 100% by insurance company: 0%</p> <p>ii. Tax-exempt municipal bond income: $35\% * 15\% = 5.25\%$ Or Add 15% of the interest income of tax-exempt municipal bonds to taxable income.</p> <p>iii. Realized capital gains: 35%</p> <p>iv. Unrealized capital gains: 0% (UCG are not investment income and therefore not taxable) Or 35%, but not taxed until realized. Or 35%, deferred tax asset/liability.</p>	
Part b: 1.5 points	
<ul style="list-style-type: none">• Revenue Offset: 20% of the change in the unearned premium reserve is added to statutory earned premium to account for acquisition expenses. Or<ul style="list-style-type: none">○ tax basis EP = $WP - 0.8 \times \text{change in UEPR}$○ tax basis EP = $\text{Statutory EP} + 0.2 \times \text{change in UEPR}$<p>This prevents the insurer from claiming a loss due to acquisition expenses by increasing the amount of taxable income.</p>• Discounting of Loss Reserves: Tax accounting requires the use of discounted loss reserves as opposed to full value reserves in the computation of incurred losses. Or<ul style="list-style-type: none">○ Tax basis Inc. Losses = $\text{Paid Losses} + \text{change in discounted reserve}$.○ Tax basis Inc. Losses = $\text{statutory Inc. Losses} - \text{change in reserve discount}$<p>This prevents the IRS from giving a tax refund on what is only a temporary loss until investment income is made.</p>	
Part c: 0.75 point	
<ul style="list-style-type: none">• 2013: Pay AMIT of \$4.8M, Minimum tax credit = \$0.3M• 2014: Apply \$0.1M of credit to RIT; pay \$3.8M, Minimum tax credit = \$0.2M• 2015: Apply \$0.2M of credit to RIT; pay \$3.9M of income tax	

SAMPLE ANSWERS AND EXAMINER'S REPORT

EXAMINER'S REPORT
<p>The candidates were expected to know the basic elements of income tax calculation, difference between statutory income versus taxable income and the alternative minimum tax.</p>
<p>Part a</p>
<p>The candidates were expected to know the basic elements of income tax calculation.</p> <p>Common mistakes included:</p> <ul style="list-style-type: none">• Answered 15% on part II, assuming proration of tax-exempt municipal bond interest is asked but the question is asking for the effective tax rate.• Answered only 35% on part IV.
<p>Part b</p>
<p>The candidates were expected to know the difference between statutory incomes versus taxable incomes.</p> <p>Common mistakes included:</p> <ul style="list-style-type: none">• Listing two reasons, where the second reason was just a restatement of the first reason• Listing adjustments on investment income. The question clearly stated that "other than the treatment of investment income..."• Only gives the "buzzwords" (e.g., Only "Revenue Offset" or only "Discounting of Loss Reserves") with no additional descriptions.
<p>Part c</p>
<p>The candidates were expected to know the basic of the alternative minimum tax.</p> <p>A common mistake was making a mistake in calculating tax credit carryforward when tax method changed from year to year. (e.g., RTI in one year and AMTI in next year)</p>

SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 20													
TOTAL POINT VALUE: 2.25	LEARNING OBJECTIVE: D1												
SAMPLE ANSWERS													
Part a: 0.75 point													
<p><u>Sample 1 (ultimate loss)</u> company ult loss = 1150 + 550 + 650 = 2350 range of 2100 – 2500</p> <ul style="list-style-type: none"> • reasonable <p><u>Sample 2 (reserves)</u></p> <table style="margin-left: 40px; border-collapse: collapse;"> <tr> <td></td> <td colspan="3" style="text-align: center;">range of unpaid claim estimates</td> </tr> <tr> <td style="text-align: left;">reserve carried</td> <td style="text-align: center;">low</td> <td style="text-align: center;">central</td> <td style="text-align: center;">high</td> </tr> <tr> <td style="text-align: center;">1200</td> <td style="text-align: center;">950</td> <td style="text-align: center;">1150</td> <td style="text-align: center;">1350</td> </tr> </table> <p>The appointed actuary should issue a reasonable opinion since the carried reserve falls within the appointed actuary's range of unpaid claim estimates.</p> <p><u>Sample 3 (IBNR)</u> AA IBNR = AA ultimate (2.3) – paid (1.15) – case (0.55) = 0.6 AA IBNR Range $0.6 \pm .2 = (0.4, 0.8)$ Management Well in AA range, <u>Reasonable</u></p>			range of unpaid claim estimates			reserve carried	low	central	high	1200	950	1150	1350
	range of unpaid claim estimates												
reserve carried	low	central	high										
1200	950	1150	1350										
Part b: 0.5 point													
<p><u>Sample 1</u> Booked reserves + materiality standard = 1300 Since 1300 is within reasonable range, RMAD exists</p>													
Part c: 1 point													
<p><u>Sample 1</u> If 10% of reserves is greater than the difference between company action level and total adjusted capital, comment should be sought if an actuary does not believe there to be a risk of material adverse deviation</p> <p>10% of 1200 = \$120k</p> <p>Company action level = $475 \times 2 = \\$950k$ Difference between total adjusted capital and company action level = $\\$1000 - \\$950 = \\$50k$</p> <p>Since $\\$120k > \\$50k$, comment would be sought</p>													

SAMPLE ANSWERS AND EXAMINER'S REPORT

EXAMINER'S REPORT

The candidates were expected to demonstrate knowledge of the Statement of Actuarial Opinion, specifically what type of opinion to issue, determination of whether RMAD exists, and details of the Bright Line Indicator Test.

Candidates generally scored very well on the core concepts of the type of opinion and determination of RMAD but struggled with respect to the details and use of the Bright Line Indicator Test.

Part a

The candidates were expected to compare management's held IBNR (or total reserves, or ultimate loss) to the actuary's range. Since the held amount is within the actuary's reasonable range, the actuary should issue a reasonable opinion.

Common mistakes included:

- Using actuary's point estimate (\$2,300 ultimate loss) instead of held IBNR/reserve/ultimate (\$2,350 ultimate loss)
- Comparing reserves to ultimates (often resulted in determination of Inadequate/Deficient opinion)
- Issuing an opinion type of "adequate" or "sufficient" instead of "reasonable", which are not valid types of opinions

Part b

The candidates were expected to compare management's held IBNR (or total reserves, or ultimate loss) *plus* the materiality standard to the actuary's reasonable range, and find that RMAD exists since the sum remains in the range using the given \$100 materiality standard.

The most common errors were:

- Using actuary's point estimate (\$2,300 ultimate loss) instead of held IBNR/reserve/ultimate (\$2,350 ultimate loss)
- Concluding RMAD does (does not) exist when held reserve + materiality standard is not (is) within the actuary's range
- Using a materiality standard other than the \$100 given
- Comparing reserves to ultimates
- Showing that a \$100 decrease in Total Adjusted Capital moves the company into the Company Action Level without recognizing whether the result is within the Appointed Actuary's range of reasonable estimates
- Comparing to the low end of the range instead of the high end (which would be risk of material *favorable* deviation)

Part c

The candidates were expected to compare 10% of reserves to the difference between Total Adjusted Capital and the Company Action Level capital, identify whether or not the test is satisfied in this example, and explain that regulators use the Bright Line Indicator Test to pursue comments

SAMPLE ANSWERS AND EXAMINER'S REPORT

from the Appointed Actuary in situations where the test is triggered and he/she does not believe RMAD exists.

Common mistakes included:

- Using 10% of capital instead of reserves
- Confusion with the trend test
- Using the \$100 materiality standard for comparison
- Using the actuary's reasonable range in a comparison
- Using Authorized Control Level instead of Company Action Level
- Concluding that RMAD exists as a result of the test (result merely leads Financial Analyst to pursue comments from the Appointed Actuary)

SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 21	
TOTAL POINT VALUE: 1.75	LEARNING OBJECTIVE: D1
SAMPLE ANSWERS	
Part a: 1 point	
<u>Sample Responses for i.</u> <ul style="list-style-type: none">• Before LPT: Reasonable opinion; because the total carried reserve is within the appointed actuary's range of unpaid claim estimates. The A.A. is opining on the total business.• Reasonable because the company carried of \$1000 is within the actuary's range of (900,1040)	
<u>Sample Responses for ii.</u> <ul style="list-style-type: none">• LPT is treated as retroactive reinsurance. Therefore does not reduce the reserves so the total net carried reserve does not change, therefore type of opinion is still Reasonable opinion.• Retroactive agreement is recorded as contra-liability, which doesn't impact reserve, therefore, same as i. Reasonable opinion.• LPT is treated as retroactive reinsurance. Reserves aren't adjusted, but negative liabilities are established. So the answer is the same as (i)	
Part b: 0.75 point	
<u>Sample 1</u> <p>The reinsurer's A.A. shall list this item as "Retroactive Reinsurance Reserves Assumed" in the exhibit A in the SAO.</p> <p>Furthermore, the reinsurer's AA shall review the reasonableness of this reserving and disclose in the SAO if he relied on the provision on the insurer's A.A. The reinsurer's A.A. shall provide the name and qualification of the insurer's A.A. in addition as well.</p> <p>If the reinsurer's A.A. cannot conclude the reasonableness of the insurer's A.A.'s provision due to inadequate data or other reason, "Qualified Opinion" shall be provided if the amount is significant compared to reinsurer's existing business volume.</p>	
<u>Sample 2</u> <p>Reserves would be treated as "Retroactive Reinsurance Assumed." They would be identified in Scope, and listed on a different line in Exhibit A. Opinion would be based on reserves in total. Reinsurance contract would be discussed in relevant comments section.</p>	
<u>Sample 3</u> <p>Reserves would be treated as retroactively assumed. Thus, they wouldn't appear in Schedule P and not impact the appointed actuary's range of unpaid claim estimates. The appointed actuary</p>	

SAMPLE ANSWERS AND EXAMINER'S REPORT

would comment on the retroactively assumed reserves in the "Relevant Comments" section of the SAO.

Sample 4

- Assuming that retroactive reinsurance due to not fulfilling the Run-off agreement criteria
- Will be reflected in Part 5 of Exh A
- Reinsurer's actuary should likely conduct own independent analysis and state own opinion -> based on where range is
- If not enough time, should review analysis for reasonability -> doesn't need to be qualified but should be disclosed
- If not enough time/data for independent review and material to reinsurer, should issue a qualified opinion and state reasons and carried amounts
- If not enough time/data and not material, don't need to make qualified opinion, but may need to disclose.

EXAMINER'S REPORT

The candidates were expected to be able to determine what type of opinion the appointed actuary should issue given the actuary's estimate of reserves and the company carried amount. Additionally, the question tested if the candidate knew how to account for a Loss Portfolio Transfer (retroactive reinsurance) in the SAO.

A majority of candidates were able to identify the type of opinion that should be issued given the carried reserves and the actuarial estimates. Only a few candidates recognized that a Loss Portfolio Transfer should be accounted for as retroactive reinsurance. Of those who did, a minority were fully aware of all of the procedures to be followed with retroactive reinsurance.

This question was complicated by the fact that the handling of retroactive reinsurance in the SAO is masked by the LPT.

Part a

For part i, the candidates were expected to know that the appointed actuary issues an opinion on the total book of reserves, regardless of the breakdown by segment. Thus, the appointed actuary should issue a reasonable opinion.

For part ii, the candidates were expected to realize that LPT's are accounted for as retroactive reinsurance. Since reserves ceded under a retroactive reinsurance agreement are accounted for as a contra-liability on the balance sheet, the reserves are NOT reduced by the retroactive ceded reserves, and thus the type of opinion issued would not change.

SAMPLE ANSWERS AND EXAMINER'S REPORT

Common mistakes included:

- Not specifying which reserves the candidate reviewed to identify the type of opinion. E.g. "Redundant opinion because the carried reserve is above the range"
- Identifying the type of opinion as "Adequate" or "Sufficient" rather than "Reasonable". The NAIC specifies "Reasonable" as the appropriate terminology.
- Not recognizing that the LPT should be accounted for as retroactive reinsurance, and therefore should not impact the type of opinion issued. A majority of candidates reviewed the "On-Going" reserves for part ii. Candidates who correctly identified the type of opinion given the reserves that they reviewed were awarded partial credit.

Part b

The candidates were expected to identify three of the following ways that assumed retroactive reinsurance reserves are incorporated in the SAO

- The assumed retroactive reinsurance reserves are NOT included in the reinsurer's loss & LAE reserves reported in Schedule P/lines 1-4 of Exhibit A
- The assumed retroactive reinsurance reserves are reported as a separate item in Exhibit A of the reinsurer's SAO.
- The retroactive reinsurance should be commented in the "Relevant Comments" section of the SAO
- The appointed actuary would either include the assumed reserves reported in Line 5 of Exhibit A within the scope of his/her opinion (and render an opinion thereon) or explicitly exclude them from the scope of the opinion, thereby rendering a "Qualified Opinion", if the reserves are material.

Common mistakes included:

- Most candidates did not realize that the assumed reserves should be classified as retroactive reinsurance and just treated them like regular prospective reinsurance.
- Discussing other impacts to the assuming company, such as how to incorporate the retroactive assumed reserves in the Income Statement, or how it impacts the company surplus. The question specifically requested the impacts to the appointed actuary and the SAO.
- Commenting from the ceding company's perspective, when the question asked how these reserves would impact the assuming company's SAO.

SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 22	
TOTAL POINT VALUE: 2	LEARNING OBJECTIVE: D1
SAMPLE ANSWERS	
Part a: 0.5 point	
<p><u>Sample Responses for Criteria 1</u></p> <ul style="list-style-type: none">• Member in good standing with Casualty Actuarial Society <p><u>Sample Responses for Criteria 2</u></p> <ul style="list-style-type: none">• Member of the American Academy of Actuaries who has been approved to issue Statements of Actuarial Opinion by the Casualty Practice Council of American Academy of Actuaries• Member of the American Academy of Actuaries who has been approved by American Academy of Actuaries to issue Statements of Actuarial Opinions <p><u>Sample Responses for Criteria 3</u></p> <ul style="list-style-type: none">• Meets Qualification standards to issue Statements of Actuarial Opinion• Meets Qualification standards of the American Academy of Actuaries to issue Statements of Actuarial Opinion	
Part b: 1 point	
<p><u>Sample Responses for Item 1</u></p> <ul style="list-style-type: none">• Affiliation to Company• Relationship with Company <p><u>Sample Responses for Item 2</u></p> <ul style="list-style-type: none">• Who did the Appointment• Appointed by Board of Directors• Appointed by Company <p><u>Sample Responses for Item 3</u></p> <ul style="list-style-type: none">• Affirmation that meets qualification standards to act as the Appointed Actuary and provide Statements of Actuarial Opinion• Qualified to issue Statements of Actuarial Opinion• Qualification• Credentialed <p><u>Sample Responses for Item 4</u></p> <ul style="list-style-type: none">• Date appointed• Time appointed	

SAMPLE ANSWERS AND EXAMINER'S REPORT

Part c: 0.5 point

Sample Responses for Item 1

- Whether there were disagreements with the former Appointed Actuary regarding the content of the opinion on matters of the risk of material adverse deviation
- Whether there were disagreements with the former Appointed Actuary on material (or substantive) issues
- Whether there were disagreements with the former Appointed Actuary on any of the following material issues: risk of material adverse deviation, required disclosures, scopes, procedure, type of opinion issued, substantive wording of the opinion, or data quality
- Whether there were material disagreements with the former Appointed Actuary on the level of reserves

Sample Responses for Item 2

- Whether the former Appointed Actuary confirms the company's statement on existence of disagreements
- Prior actuary confirms disagreements
- Prior actuary's response on disagreements

Sample Responses for Item 3

- If there are disagreements, how they were resolved or if they were not resolved.
- Resolution of disagreements
- Resolution of disputes

EXAMINER'S REPORT

The candidates were expected to provide information from the NAIC Annual Statement Instructions including the qualification standards, the documentation standards for the appointment of the qualified actuary, and additional information needed to be communicated when there is a change in the Appointed Actuary.

Part a

The candidates were expected to recall the standards that must be met in order to be a Qualified Actuary in the US.

Common mistakes included:

- Not indicating that the member of the Casualty Actuarial Society is in good standing
- Suggesting that the actuary have to be a Fellow of the Casualty Actuarial Society
- Not defining the needed approval by the Casualty Practice Council of the American Academy of Actuaries

Part b

The candidates were expected to provide four pieces of information about the Appointed Actuary that must be disclosed.

SAMPLE ANSWERS AND EXAMINER'S REPORT

Common mistakes included:

- Listing dates around the actual review (i.e. date of evaluations, data terms, etc.) and NOT the appointment date
- Not defining the relationship to the insurer but rather the relationship the appointed actuary has to their employer

Part c

The candidates were expected to describe the additional communication required when there is a change in the appointed actuary.

Common mistakes included:

- Candidates were not indicating the materiality / relevance of the disagreement
- Candidates were listing documentation around the qualification standards of the Appointed Actuary discussed in (b) rather than the additional documentation needed for replacement.

SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 23	
TOTAL POINT VALUE: 3.5	LEARNING OBJECTIVE: D1
SAMPLE ANSWERS	
Part a: 0.5 point	
<p><u>Purpose</u></p> <ul style="list-style-type: none">• Assess the reserve reasonableness• Provide actuary's opinion to the regulator regarding the reserve adequacy• Opine on the reserves of the Company• Inform readers of specific risk factors to those reserves• Advise on risks and uncertainties leading to adverse deviation in reserves <p><u>Audience</u></p> <ul style="list-style-type: none">• Regulator is the audience• Investors• Public• Stakeholders• Board of Directors• Management	
Part b: 3 points	
<p>Long Term Duration Contracts Unearned Premium Reserves - Include and disclose risks around contracts 13+ months that can't be cancelled (how many, associated risks, etc.)</p> <p>Environmental & Asbestos - Any material exposure to environmental/asbestos losses, LOBs affected, reserves held, methods used to calculate reserves and degree of uncertainty. Asbestos losses contain a large degree of uncertainty.</p> <p>Anticipated salvage & subrogation - want to inform regulator of potential understatement of reserves due to collectibility concerns related to anticipated salvage & subrogation</p> <p>Changes in Methods and Assumptions - This could help explain any differences between current reserves and reserves held in prior years from prior actuarial report</p> <p>Reinsurance (Collectability, Financial, Retroactive) - Provides insight into Insurers' Reinsurance situation, if they are correct on recoverables or if have risk in future of not being able to collect and how much is uncollected. Also, shows how much securities in Reinsurance the insurer has to protect themselves</p>	

SAMPLE ANSWERS AND EXAMINER'S REPORT

IRIS Ratios 11, 12 and 13 - Actuary must note whether any of those ratios are out of range and if so provide reasons why. This is included so now can understand the causes of reserve development.

Net reserves for the company's share in pools/associations - pool reserves are often analyzed by another party and may be subject to booking lag so regulator needs to understand their materiality and how they are calculated

Claims-made extended loss and LAE reserve - this item is subject to similar risks as the reserves in many cases but is generally opined on separately, makes regulator aware of this additional item

Discounting - Actuary must disclose if tabular and/or non-tabular discounting was used. If so, the actuary must state the basis and assumptions of the discount. Included because in order for regulators to fully understand a company's financials and to be able to compare it to its peers, the regulator needs to know about the existence of discounting.

EXAMINER'S REPORT

The candidates were expected to understand the purpose of a Statement of Actuarial Opinion, the intended audience, and understand disclosures of the RELEVANT COMMENTS section other than materiality standard and risk of material adverse deviation, and reasons for the inclusion.

Part a

The candidates were expected to know the primary purpose of the Statement of Actuarial Opinion - to provide an opinion and evaluate the reasonability of loss reserves. The primary intended audience is regulators, but additional audiences were acceptable, including Board of Directors, management, and the public.

A common mistake was stating that the primary purpose of the SAO was to evaluate "risks" to the company without tying the risks back to reserves

Part b

The candidates were expected to understand the reasons for including certain disclosures in the RELEVANT COMMENTS section.

Common mistakes included:

- Listing items for disclosure without providing the rationale for the disclosure, or providing an incorrect rationale
- Including items that are not required to be disclosed, such as "subsequent events",

SAMPLE ANSWERS AND EXAMINER'S REPORT

“changes in accounting policies”, or “commutations”

- Stating that “Methods and Assumptions” need to be disclosed as opposed to “Changes in Methods and Assumptions”
- Reinsurance was often discussed without mentioning “uncollectible” or “financial/retroactive”
- Being too broad in explanation and not specific enough with respect to reasons for inclusion

SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 24

TOTAL POINT VALUE: 2 | **LEARNING OBJECTIVE: D1**

SAMPLE ANSWERS

Sample 1

	Net			Gross		
	Low	Central	High	Low	Central	High
A: Range of Estimates for Reserve	54,000		66,000	54,000		66,000
B: Actuary's Point Estimate for Reserve		60,000			60,000	
C: Management Booked Reserve		58,000			58,000	
D: Difference	4,000	-2,000	-8,000	4,000	-2,000	-8,000

No cessions so gross equals net

E: The company has not experienced a 1-year adverse development in excess of 5% of prior year surplus in 3 or more of the last 5 years.

Calculation for E

2015	$(900)/35,000 = -.026$
2014	$1,500/38,000 = .04$
2013	$1,600/40,000 = .04$
2012	$(1,800)/40,000 = -.045$
2011	$2,000/38,000 = .05$

Sample 2 (Candidates did not lose points if A –D were in the wrong order)

	Gross and Net are the same		
	Low	Central	High
A: AA Point Estimate		60,000	
B: AA Range of Reasonable Est	54,000		66,000
C: Carried L & LAE Reserves		58,000	

SAMPLE ANSWERS AND EXAMINER'S REPORT

D: Difference Carried and Indicated	4,000	-2,000	-8,000
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E: The company did not experience one year development in excess of 5% of prior PHS for at least 3 out of the last 5 years.

Calculation for E

	2015	2014	2013	2012	2011
Ratio 11	-900/35,000 = -2.6%	3.9%	4%	-4.5%	5.3%

Sample 3 (Alternate for Parts A-D)

	Low	Point	High
A: Actuary Estimate Gross Loss&:LAE Reserves	54,000	60,000	66,000
B: Company Carried		58,000	
C: Difference	4,000	-2,000	-8,000

Sample 4 (Alternate Explanation for Part E)

E: In the last 5 years, only year 2011 had one year adverse development larger than 5%.

EXAMINER'S REPORT

The candidates were expected to demonstrate that they knew the content of the Actuarial Opinion Summary (AOS). They were expected to identify:

- A: The Appointed Actuary's range of reasonable estimates for loss and loss adjustment expense reserves, net and gross of reinsurance;
- B: The Appointed Actuary's point estimate for loss and loss adjustment expense reserves, net and gross of reinsurance;
- C: The company's carried reserve, net and gross of reinsurance;
- D: The difference between the company's carried reserves and the Appointed Actuary's estimates as calculated in part A and B, net and gross of reinsurance;
- E: If there was one-year adverse development in excess of 5% of surplus in at least 3 of the last 5 years.

SAMPLE ANSWERS AND EXAMINER'S REPORT

The candidates were expected to correctly calculate parts A-D including both net and gross amounts, if they correctly calculated the one-year adverse development in at least 3 out of the 5 years and if they provided a statement on whether the company has experienced one-year adverse development in excess of 5% of surplus in at least 3 of the last 5 years.

Candidates did receive credit for the statement in part E if they made a statement that only 1 year in the last 5 had one-year adverse development in excess of 5% of surplus. They also received credit if they combined lines A and B of the AOS.

Common mistakes included:

- Failing to provide the estimates net of reinsurance or saying that there is no net or net is N/A
- Not including case reserves as part of the Appointed Actuary's estimates
- Calculating the lower end of the Actuary's range as $60,000/1.1$ instead of $60,000 \times .9$
- Subtracting case reserves from the company's carried reserve amount
- Not using the prior year's surplus in the calculation for part E
- Including both development on one-year prior and two-year prior in the calculation for part E (for example $(-900 - 1000)/35,000$)
- Only calculating part D for the point estimate and not the range of reasonable estimates
- Subtracting items in the wrong order for part D (the final answer having the wrong +/- sign)

SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 25	
TOTAL POINT VALUE: 1.5	LEARNING OBJECTIVE: E1
SAMPLE ANSWERS	
<p>Contract i: Contract doesn't qualify because no timing risk Any one of the following modifications:</p> <ul style="list-style-type: none">• Change contract such that reinsured losses are reimbursed as they occur• Change contract such that reinsured losses are reimbursed in a timely manner, or within set time period (i.e. 30 days / 60 days / 90 days after the reinsured paid the loss)• Removing the fixed timing clause	
<p>Contract ii: ERD threshold = 1%, should not be treated as reinsurance. Any one of the following modifications:</p> <ul style="list-style-type: none">• Reduce premium to increase ERD above the chosen threshold• Increase ceded losses (lower attachment point, higher reinsured limit) to increase ERD above the chosen threshold• Reduce profit commission such that reinsurance premium can be reduced and ERD is increased above chosen threshold	
<p>Contract ii alternate: Assume ERD threshold = 0.7%, contract qualifies for reinsurance accounting</p>	
<p>Contract iii: Contract doesn't qualify due to lack of underwriting risk. Any one of the following:</p> <ul style="list-style-type: none">• Change contract to cover losses in excess of a higher limit (i.e. \$9M or higher) where losses are uncertain• Change contract to a quota share to reinsure substantially all risk	
EXAMINER'S REPORT	
<p>The candidates were expected to be able to determine what contractual features would qualify, or could preclude, a contract from qualifying for reinsurance accounting (i.e. passes risk transfer)</p> <p>For contract i, candidates typically identified the lack of timing risk due to the contractually determined payment date.</p> <p>A common mistake was providing a modification that did not provide for timely reimbursement (i.e. 5 years after reinsured makes payment).</p> <p>For contract ii, candidates typically selected a 1% ERD and then used this threshold correctly to</p>	

SAMPLE ANSWERS AND EXAMINER'S REPORT

state that the contract would not qualify for reinsurance accounting under such a threshold. Under this approach, candidates often proposed modification that recognized that either less premium or more ceded loss would impact the ERD calculation such that reinsurance accounting could be achieved. A common approach was to state a lower attachment point, or state that the attachment point should be lowered until the ERD achieves the selected value.

A less common approach was to select an ERD threshold less than 0.9% and conclude that reinsurance accounting was appropriate.

Common mistakes included:

- Focusing on the profit commission without connecting this to the reinsurance premium and thus the ERD
- Suggesting modifications without direction or without clear connection to their impact on the ERD calculation.

For contract iii, candidates generally were able to identify that the contract did not qualify for reinsurance accounting due to the lack of underwriting risk. Acceptable responses focused on introducing uncertainty in the ceded losses or modifying the contract such that substantially all of the risk was transferred.

A common mistake was a response that focused on the reinsurer's investment returns.

For all contracts, a common mistake included stating a conclusion without providing any reasoning and failure to include modifications.

SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 26	
TOTAL POINT VALUE: 4.25	LEARNING OBJECTIVE: E1
SAMPLE ANSWERS	
Part a: 2.25 points	
<p><u>i.</u></p> <p>500 300</p> <p>500</p> <p><u>ii.</u></p> <p>1500 1800</p> <p>1500</p> <p><u>iii</u></p> <p>1500 1700</p> <p>1500</p>	
Part b: 1 point	
<p>i.</p> <p>$700 - 750 * .825 = +81.25$ increase in taxable income</p> <p>ii.</p> <p>$750 * .775 - 700 = -118.75$ decrease in taxable income</p>	
Part c: 0.5 point	
<p>Any two of the following:</p> <ul style="list-style-type: none"> • To facilitate exiting a line of business or geographic area • Cash infusion to the insurer • End a strained or frayed relationship between insurer and reinsurer • Believes the commutation is profitable based on their view of the loss reserves • Solvency concerns with the other party 	
Part d: 0.5 point	
<ul style="list-style-type: none"> • Insurer would accept a lower price because: <ul style="list-style-type: none"> • it is concerned about the credit risk associated with the reinsurer • it would rather receive something now rather than the possibility of nothing later • Reinsurer would accept a higher price because <ul style="list-style-type: none"> • Reinsurer instability causes insurer to require additional collateral and as a result the reinsurer may find it financially beneficial to pay a higher commutation price rather than increase collateral • Reinsurer believes reserves may develop more adversely and therefore would pay a higher amount to remove the liability 	
EXAMINER'S REPORT	
<p>The candidates were expected to be able to determine the impact of reinsurance and a commutation on paid and ultimate loss triangles as well as taxable income. Candidates were also expected to demonstrate knowledge regarding the motivations for a commutation as well as</p>	

SAMPLE ANSWERS AND EXAMINER'S REPORT

factors that would impact its price.

Candidates were more familiar with the general motivations around commutations than they were the calculated impacts to triangles and income.

Part a

The candidates were expected to understand the impacts of reinsurance and commutation on the loss triangles.

A common mistake was not applying the quota share to development at 24 months

Part b

The candidates were expected to calculate the impact of a commutation on taxable income, recognizing the consideration paid / received and the impact of discounting the change in reserves.

Common mistakes included:

- Applying the discount to the change in paid loss or the change in total incurred loss
- Applying the tax rate of 35%
- Reversing the signs of consideration paid/received vs. change in loss reserve

Part c

The candidates were expected to understand motivations from the insurer's perspective.

A common mistake was indicating that the insurer would enter a commutation to generate a tax loss.

Part d

The candidates were expected to understand the impact of reinsurer instability on the commutation price. Two tracks of answers emerged. The first, and most prevalent, was that the insurer would accept a lower price as a result of the credit risk associated with the reinsurer. The second was that the reinsurer would accept a higher price because they believed that the reserves in question would develop more adversely.

A common mistake was not understanding the direction of the commutation payment and therefore confusing the impact on price (example, insurer would pay a higher price now to avoid future losses).