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Exam 6-United States

Regulation and Financial Reporting
(Nation Specific)

April 25, 2014

4 HOURS

INSTRUCTIONS TO CANDIDATES

1. This 87 point examination consists of 27 problem and essay questions.

2. For 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.

   - Write your Candidate ID number and the examination number, 6US, at the top of each answer sheet. Your name, or any other identifying mark, must not appear.

   - Do not answer more than one question on a single sheet of paper. Write only on the front lined side of the paper – **DO NOT WRITE ON THE BACK OF THE PAPER**. Be careful to give the number of the question you are answering on each sheet. If your response cannot be confined to one page, please use additional sheets of paper as necessary. Clearly mark the question number on each page of the response in addition to using a label such as "Page 1 of 2" on the first sheet of paper and then "Page 2 of 2" on the second sheet of paper.

   - The answer should be concise and confined to the question as posed. When a 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.

CONTINUE TO NEXT PAGE OF INSTRUCTIONS

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4. Prior to the start of the exam you will have a **fifteen-minute reading period** in which you can silently read the questions and check the exam booklet for missing or defective pages. A chart indicating the point value for each question is attached to the back of the examination. <u>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.</u> 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. <u>Do not remove this label.</u> Keep a record of your Candidate ID number for future inquiries regarding this exam.

6. <u>Candidates must remain in the examination center until two hours after the start of the examination.</u> 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, <u>candidates may not leave the exam room during the last fifteen minutes of the examination.</u>

7. <u>At the end of the examination, place all answer sheets in the Examination Envelope.</u> 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. <u>Only the answer sheets will be graded.</u> Also place any included reference materials in the Examination Envelope. <u>BEFORE YOU TURN THE EXAMINATION ENVELOPE IN TO THE SUPERVISOR, BE SURE TO SIGN IT IN THE SPACE PROVIDED ABOVE THE CUT-OUT WINDOW.</u>

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. <u>Do not put the self-addressed stamped envelope inside the Examination Envelope.</u>

   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. <u>Do not put scrap paper in the Examination Envelope.</u> The supervisor will collect your scrap paper.

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

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

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

10. The exam survey is available on the CAS Web Site in the "Admissions/Exams" section. Please submit your survey by May 14, 2014.

END OF INSTRUCTIONS

1. (3 points)

   a. (1.5 points)

      Describe three benefits of using catastrophe models to estimate property loss exposure.

   b. (0.5 point)

      Briefly describe two suggested regulatory interventions to safeguard against insurer manipulation of catastrophe models.

   c. (0.5 point)

      Briefly describe two non-regulatory consequences of an insurer manipulating its catastrophe models.

   d. (0.5 point)

      Briefly describe two ways regulators can validate models without requiring the release of proprietary information.

2. (1.75 points)

    a. (0.25 point)

    Define model law, as used by the NAIC.

    b. (0.5 point)

    Briefly describe two ways that states benefit from model laws.

    c. (0.5 point)

    Describe a way that insurers benefit from model laws.

    d. (0.25 point)

    Briefly describe a reason that a state might modify a particular model law.

    e. (0.25 point)

    Briefly describe a reason that a state might not adopt a particular model law.

3. (4 points)

    a. (3 points)

    Construct and justify a framework for insurance regulation for primary insurance companies that addresses each of the following elements:

    - Regulatory jurisdiction

    - Duties of regulators

    - Rate regulation

    - Solvency regulation

    b. (0.5 point)

    Discuss how the regulatory system described in part a. above would function in an increasingly globalized insurance industry.

    c. (0.5 point)

    Justify whether or not the system described in part a. above would require variations for reinsurers.

4. (3 points)

   a. (0.5 point)

   Describe the prohibitions established by the Sherman Antitrust Act.

   b. (0.5 point)

   Two auto insurance companies have decided to pool their data to develop rates and coverages. Discuss how this decision would be addressed solely under the Sherman Antitrust Act.

   c. (0.5 point)

   Briefly describe two potentially negative impacts for insurance consumers if the Sherman Antitrust Act were to be repealed.

   d. (0.5 point)

   Briefly describe the impact of each of the following cases on bureau ratemaking:

   - *Paul v. Virginia*

   - *U.S. v. South-Eastern Underwriters Association*

   e. (0.5 point)

   Briefly describe two benefits of the Dodd-Frank Act for surplus lines insurers.

   f. (0.5 point)

   Describe how a ceding insurer benefits from the Dodd-Frank Act.

5. (2.75 points)

    a. (0.5 point)

    Briefly describe two reasons that using credit scores in insurance may be appropriate.

    b. (0.75 point)

    According to McCarty, briefly describe three reasons why the use of credit scores in insurance ratemaking may not be appropriate.

    c. (1.5 points)

    Assume that an insurer uses credit scoring in ratemaking. Discuss the impact an economic downturn would have on the following stakeholders:

- Insurance consumers
- Insurance companies
- Regulators

6. (3.5 points)

    a. (0.25 point)

    Briefly describe the primary goal of the NAIC Analyst Team System.

    b. (2 points)

    Identify the four dimensions of the statistical phase of IRIS and give an example of a financial ratio for each.

    c. (0.5 point)

    Briefly describe one similarity and one difference between IRIS and the Financial and Solvency Tracking System (FAST).

    d. (0.75 point)

    Briefly describe three limitations of the NAIC Analyst Team System.

7. (2.25 points)

   a. (0.5 point)

   Briefly describe two strategies plaintiffs' attorneys have pursued to maximize their clients' asbestos-related claim settlements.

   b. (0.5 point)

   Briefly describe two reforms that states have implemented to improve the tort process related to asbestos claims.

   c. (0.5 point)

   Briefly describe two factors that judges might take into account when evaluating the reliability, or scientific validity, of evidence following the *Daubert* decision.

   d. (0.25 point)

   Briefly describe the *Daubert* decision's impact on evidence admitted into courts.

   e. (0.5 point)

   Describe a potential effect of the *Daubert* decision on asbestos-related claim settlements.

8. (4 points)

A state has an assigned risk auto insurance plan for risks that are rejected by the voluntary market. The state is concerned about the exposure growth and poor loss experience of this plan.

a. (0.5 point)

Describe how switching to a reinsurance facility may impact the size of the residual market.

b. (2 points)

Describe how the government facilitates full consumer participation and imposes cross subsidies in obtaining personal auto insurance and saving for retirement.

c. (1.5 points)

Provide three arguments either for or against the statement: "All drivers, including those in the residual market, should pay actuarially fair rates for their automobile liability insurance."

9. (2.25 points)

Suppose the federal government wants to offer insurance to reduce banks' risk on loans to prospective homeowners to mitigate increased default risk in a recession.

a. (1.25 points)

Design a program to fund this insurance and briefly explain how it would meet the following goals of government participation in insurance:

- Convenience
- Greater efficiency
- Social purposes

b. (1 point)

Explain whether or not this new program can meet its goals while satisfying the following ratemaking principles:

- A rate provides for all costs associated with the transfer of risk.
- 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.

10. (2 points)

Insurance company XYZ is licensed to transact insurance in a state and has been placed in liquidation. The following table shows XYZ's liabilities (all figures are in millions of dollars):

Category	Liabilities
Unearned premiums	10
Catastrophe loss reserves	40
Ocean Marine loss reserves	25
Inland Marine loss reserves	50
Employee pension liabilities	400

The following table gives data for insurance companies in the state (all figures are in millions of dollars):

Company	Written Premium	Earned Premium	Surplus
A	5,000	6,000	3,333
B	3,000	2,500	1,500
C	1,700	1,400	405
XYZ	300	100	(200)

a. (0.5 point)

Calculate the amount of XYZ's liabilities that are eligible for recovery from the guaranty fund.

b. (0.5 point)

Calculate the amount insurance company B will be assessed due to XYZ's liquidation.

c. (0.5 point)

Identify two guaranty fund limitations, other than lines of business covered, that affect insureds' recoveries.

d. (0.5 point)

Discuss whether or not guaranty funds have generally succeeded in covering the liabilities they were intended to cover.

11. (2.5 points)

    a. (1 point)

        Describe two advantages of having state governments rather than private insurers provide workers compensation insurance.

    b. (1 point)

        Describe two advantages of having private insurers rather than state governments provide workers compensation insurance.

    c. (0.5 point)

        Evaluate the effectiveness of private insurers in the workers compensation marketplace based on the propensity of states to operate state funds.

12. (1.75 points)

For the Terrorism Risk Insurance Program:

a. (0.75 point)

Briefly describe the roles of:

- federal government

- state government

- private insurers

b. (0.5 point)

Briefly describe two reasons for government involvement.

c. (0.5 point)

Evaluate the program's effectiveness.

13. (2 points)

An insurance company writes multiple lines of business, including both homeowners and private passenger automobile. Given the following information from the company's Insurance Expense Exhibits (IEEs) and Annual Statements (all figures are in thousands of dollars):

All Lines of Business		2011	2012
Policyholders' surplus		8,000	8,400
Net loss and LAE reserves		16,400	16,700
Net unearned premium reserves		4,000	4,100
Net earned premium		8,800	9,100

Homeowners			2011	2012
Net loss and LAE reserves			1,000	1,100
Net unearned premium reserves			1,700	1,800
Net earned premium			3,100	3,200

Private Passenger Auto		2011	2012
Net loss and LAE reserves		2,000	2,000
Net unearned premium reserves		1,100	1,100
Net earned premium		3,200	3,200

a. (1 point)

Calculate the policyholders' surplus that would be allocated to homeowners and to private passenger auto in the IEE.

b. (0.5 point)

Discuss the effectiveness of the method used to allocate surplus by line of business in the IEE.

c. (0.5 point)

Provide one difference in how the IEE and the Exhibit of Premiums and Losses (Statutory Page 14) present data.

14. (5 points)

As part of the financial audit of an insurance company's 2012 Annual Statement, errors were found in the Balance Sheet and no errors were found in the Underwriting and Investment Exhibit or Schedule P. Given the following information (all figures are in thousands of dollars):

Underwriting and Investment Exhibit
Part 1A - Recapitulation of All Premiums

Line of Business	Amount Unearned (Running One Year or Less from Date of Policy)	Amount Unearned (Running More Than One Year from Date of Policy)	Earned But Unbilled Premium	Reserve for Rate Credits and Retrospective Adjustments Based on Experience
Totals	2,050	50	100	75

Part 1B - Premiums Written

| | | Reinsurance Assumed | | Reinsurance Ceded | |
	Direct Business	From Affiliates	From Non-Affiliates	To Affiliates	To Non-Affiliates
Totals	1,450	3,500	100	1,375	25

Schedule P
Part 1 - Summary

| Years in Which Premiums Were Earned and Losses Were Incurred | Loss Payments | | Defense and Cost Containment Payments | | Adjusting and Other Payments | | Salvage and Subrogation Received |
	Direct and Assumed	Ceded	Direct and Assumed	Ceded	Direct and Assumed	Ceded	
Totals	22,600	4,600	2,100	300	1,800	100	900

| Years in Which Premiums Were Earned and Losses Were Incurred | Losses Unpaid | | | | Defense and Cost Containment Unpaid | | | | Adjusting and Other Unpaid | |
| | Case Basis | | Bulk + IBNR | | Case Basis | | Bulk + IBNR | | | |
	Direct and Assumed	Ceded	Direct and Assumed	Ceded	Direct and Assumed	Ceded	Direct and Assumed	Ceded	Direct and Assumed	Ceded
Totals	4,400	1,000	5,300	1,050	500	60	1,100	120	500	1

All assets and liabilities from the Statutory Balance Sheet:

Cash and invested assets	13,385
Loss Reserve	7,600
LAE Reserve	1,800
Non-admitted assets	10
Accrued retrospective premium	100
Amounts recoverable from reinsurers	200
Ceded reinsurance premiums payable	30
Deferred premiums, agents' balances	250
Unearned premiums reserve	2,175
Reinsurance payable on paid losses	1,500
Uncollected premium and agents' balances	550

<<QUESTION 14 CONTINUED ON NEXT PAGE>>

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14. (continued)

a. (2.25 points)

Identify and correct the three Balance Sheet errors.

b. (1.75 points)

Using the corrected values from part a. above, calculate the company's total assets, total liabilities, and policyholders' surplus.

c. (1 point)

Based on the recalculated Balance Sheet items, calculate IRIS ratio 2 (net written premium to policyholders' surplus), and discuss how a regulator may respond to the result.

15. (2.5 points)

A primary insurance company writes only homeowners insurance. The following excerpt is from the company's 2012 Notes to Financial Statements:

23. REINSURANCE

A. Unsecured Reinsurance Recoverable
The company had three reinsurers whose aggregate recoverable for ceded losses, loss adjustment expenses, and unearned premiums recoverable as of December 31, 2012, exceeded 3% of the Company's Surplus. Information concerning these companies is as follows:

Reinsurer	Net Recoverable	Recoverable's Percentage of Company's Surplus	A.M. Best Rating
X	6,223,000	4.0%	B+
Y	6,223,000	4.0%	B-
Z	5,445,000	3.5%	A

Reinsurer X has always made its payments within 120 days.
Reinsurer Y has always been current on its payments.
Reinsurer Z has always been current on its payments.

B. Reinsurance Recoverable in Dispute
The company has no material recoverables in dispute.

…

D. Uncollectible Reinsurance
The company has no material uncollectible reinsurance.

a. (1.5 points)

Identify three questions the Appointed Actuary might raise to the primary insurer regarding Note 23, and briefly describe the motivation behind each question.

b. (1 point)

The insurer's book of business was exposed to a catastrophic winter storm during the final week of December 2012. Reinsurer Y provides substantial catastrophe coverage to the insurer. Identify two additional questions the Appointed Actuary might raise to the primary insurer relating to the reinsurance for this catastrophe, and briefly describe the motivation behind each question.

16. (4.5 points)

On January 1, 2010, Insurer AA sold a workers compensation policy to Manufacturer EE and entered into a 30% quota share treaty with Reinsurer CC, with this treaty being the primary reinsurance agreement. Insurer AA also began participating in a 50% intercompany pooling arrangement with lead member Insurer BB, which is secondary to the quota share agreement with Reinsurer CC.

On July 1, 2011, a claim valued at $900,000 with an accident date of November 15, 2010, was reported to Insurer AA.

On October 1, 2011, Insurer AA and Insurer BB purchased retroactive reinsurance from Reinsurer DD to cover each of their shares of the claim.

On September 1, 2012, the intercompany pooling arrangement between Insurer AA and Insurer BB was changed to 25% for Insurer AA and 75% for Insurer BB.

On October 15, 2012, $100,000 of adverse development was recorded and $400,000 was paid to the claimant.

As of December 31, 2012, Insurer AA had not been reimbursed for this claim. Assume that the claim does not influence bulk reserves or IBNR reserves.

a. (1.5 points)

Calculate the entries for this claim for the following parts of Insurer AA's 2012 Schedule P:

- Part 2D - Workers' Compensation
  (Incurred Net Losses & DCC Reported at Year End)

- Part 3D - Workers' Compensation
  (Cumulative Paid Net Losses & DCC Reported at Year End)

b. (1.75 points)

Calculate the entries for this claim in Schedule F – Part 3 (Ceded Reinsurance) in Insurer AA's 2012 Annual Statement. Do not show any unaffected columns.

c. (0.5 point)

Briefly explain the treatment and effect of the retroactive reinsurance contract on Insurer AA's 2012 balance sheet. Do not perform any calculations.

d. (0.75 point)

Identify three places in Insurer AA's Annual Statement other than Schedule P, Schedule F, and the balance sheet that are affected by the claim reported on July 1, 2011.

17. (4 points)

Using the following Schedule P data for Private Passenger Auto Liability from an insurance company's 2012 Annual Statement (all figures in thousands of dollars):

Part 2B - Incurred Net Losses & DCC Reported at Year End

Year	2009	2010	2011	2012
2009	Information not provided			
2010		1,570	1,590	1,590
2011			1,550	1,640
2012				1,630

Part 5B - Section 1 - Cumulative Number of Claims Closed with Loss Payment

Year	2009	2010	2011	2012
2009	Information not provided			
2010		160	230	250
2011			150	220
2012				150

Part 3B - Cumulative Paid Net Losses & DCC Reported at Year End

Year	2009	2010	2011	2012
2009	Information not provided			
2010		610	1,090	1,340
2011			630	1,120
2012				788

Part 5B - Section 2 - Number of Claims Outstanding

Year	2009	2010	2011	2012
2009	Information not provided			
2010		100	30	10
2011			90	30
2012				90

Part 4B - Bulk & IBNR Reserves on Net Losses & DCC Reported at Year End

Year	2009	2010	2011	2012
2009	Information not provided			
2010		427	190	70
2011			480	210
2012				415

Part 5B - Section 3 - Cumulative Number of Claims Reported

Year	2009	2010	2011	2012
2009	Information not provided			
2010		310	330	330
2011			290	310
2012				280

<<QUESTION 17 CONTINUED ON NEXT PAGE>>

17. (continued)

a. (2.5 points)

Complete the following triangles:

Average Paid Severity Per Closed Claim

Year	2009	2010	2011	2012
2009	3,750	4,417	5,200	5,500
2010		?	?	?
2011			?	?
2012				?

Average Outstanding Case Reserves

Year	2009	2010	2011	2012
2009	5,500	10,333	18,000	20,000
2010			?	?
2011			?	?
2012				?

b. (0.5 point)

Calculate the calendar year 2012 loss & DCC development on prior years for accident years 2010 and 2011.

c. (1 point)

Using the results from parts a. and b. above, identify two questions the appointed actuary should raise to the company's management, and briefly describe the rationale for each question.

18. (6 points)

Suppose the alternative minimum income tax (AMIT) rate changed from 20% to 30% on January 1, 2012, while the regular income tax rate remained unchanged at 35%. An insurer's investment possibilities and financial projections for 2012 are shown below (all values are in millions of dollars):

Investment	Yield	Rating	RBC Charge
Municipal Bonds	4%	NAIC 3	2%
Corporate Bonds	9%	NAIC 5	10%

	Projections for 2012
Bond portfolio (as of year-end)	1,500
Unaffiliated, non-dividend-paying common stock (as of year-end)	50
Reinsurance recoverable (as of year-end)	15
Provision for reinsurance (as of year-end)	1.5
Non-tabular discount (as of year-end)	2
Surplus (as of year-end)	235
Written premium	500
Earned premium	490
Change in loss reserve discount	10
Statutory underwriting income	5
R0 for RBC calculation	50
R4 for RBC calculation (unadjusted for reinsurance credit risk)	100
R5 for RBC calculation	130
2012 RBC ratio (using 20% AMIT rate)	211%

a. (2.25 points)

Assuming that the insurer intends to hold a bond portfolio that maximizes its 2012 net income, calculate the amount of the bond portfolio that should be allocated to municipal bonds.

b. (3.25 points)

Using the bond portfolio allocation from part a. above, calculate and comment on the insurer's projected 2012 RBC ratio. Ignore the asset concentration factor and bond size adjustment factor.

c. (0.5 point)

Propose an optimal allocation strategy for this insurer's bond portfolio. Do not perform any calculations.

19. (4.25 points)

An insurer writing workers compensation, property, and general liability policies has obtained reinsurance for excess and catastrophic losses for the past six years. The following information is either provided in or derived from the 2012 Annual Statement (all figures in millions of dollars).

	2010	2011	2012
Premiums Written:			
Direct basis	483.5	594.6	611.7
Reinsurance assumed	19.2	33.3	39.0
Reinsurance ceded	21.7	66.3	131.4
Ceding Commission:			
Reinsurance ceded, excluding contingent	6.2	15.1	31.9
Contingent – reinsurance ceded	1.4	1.6	3.4
Unearned Premium:			
Total authorized other-U.S. insurers unaffiliated	3.4	16.3	23.1
Total unauthorized other-U.S. insurers unaffiliated	0.0	0.6	1.6
Authorized mandatory pools	1.3	3.1	3.4
Unauthorized mandatory pools	0.3	0.6	1.3
Authorized voluntary pools	3.1	3.8	5.3
Unauthorized voluntary pools	0.0	0.6	1.6
Total authorized non-U.S. insurers	4.4	5.6	12.2
Total unauthorized non-U.S. insurers	2.5	4.1	5.9
Surplus as regards policyholders	67.7	67.5	77.1
IRIS ratio 11	2.4%	-2.6%	14.2%
IRIS ratio 12	0.7%	-4.3%	17.4%
IRIS ratio 13	3.2%	11.6%	27.4%

a. (1.5 points)

Calculate the insurer's IRIS ratio 4 (surplus aid to policyholders' surplus) for 2012 and briefly describe the purpose of IRIS ratio 4.

b. (0.5 point)

Explain a possible reason for the unusual value of IRIS ratio 4 for this company.

c. (2.25 points)

Identify three IRIS ratios that are affected by the use of surplus aid, and calculate these ratios both before and after the adjustment reflecting the unusual value produced by IRIS ratio 4.

20. (5.25 points)

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

Credit-Related Assets	Amount Held	Charge Factor
Non-affiliate and alien affiliate reinsurance recoverables subject to RBC	21,000	0.10
Interest, dividends, etc. due and accrued	750	0.01
Federal income tax recoverable	900	0.05
Recoverable from parent, subsidiaries and affiliates	-	0.05
Aggregate write-ins for other than investment assets	250	0.05
All other	20	0.05

The company has also calculated the following RBC Charges and balance sheet items:

Risk Category	RBC Charge
Cash	10
Bonds	40,000
Common stocks	20,000
Affiliated domestic insurers	25,000
Real estate	10,000
Basic loss reserving risk	400,000
Excessive growth penalty - loss reserve	75,000
Basic premium risk	300,000
Excessive growth penalty - written premium	25,000

Balance Sheet Item	Statement Value
Policyholders' surplus	525,000
Non-tabular loss & LAE discount	30,000
Tabular loss & LAE discount for indemnity	25,000

a. (1.75 point)

Calculate the final credit risk RBC charge.

b. (2.25 points)

Calculate R0 through R5 and the total RBC requirement for the insurance company.

c. (1.25 points)

Determine the action level indicated by the result of part b. above, and describe the actions of both the regulator and the company under the RBC Model Act.

21. (3 points)

   a. (0.5 point)

   Identify the primary intended user of financial statements prepared under each of SAP and GAAP.

   b. (1 point)

   Briefly explain the accounting treatment of the following items under each of SAP and GAAP:

   - Deferred acquisition costs.

   - Discounting of loss and loss adjustment expense reserves.

   c. (1 point)

   Justify the accounting treatment of each item in part b. above given the intended users in part a. above.

   d. (0.5 point)

   From an accounting perspective, justify an insurer's decision to rent rather than buy furniture.

22. (1.25 points)

    a. (0.75 point)

       Briefly describe three adjustments necessary to restate an insurance company's statutory loss reserves to a fair value basis.

    b. (0.5 point)

       Under an economic environment of very low investment yields, explain whether the fair value of loss reserves is likely to be higher or lower than loss reserves recorded on a statutory accounting basis.

23. (2.75 points)

An insurance company began writing business in 2009. Given the following information from the company's 2012 Annual Statement:

Schedule P - Part 2 - Summary

Years in Which Losses Were Incurred	Incurred Net Losses and Defense Cost Containment Expenses Reported at Year End ($000 omitted)			
	2009	2010	2011	2012
2009	16,500	15,000	13,500	13,000
2010		14,500	17,000	19,000
2011			16,000	14,750
2012				16,000

Schedule P - Part 3 - Summary

Years in Which Losses Were Incurred	Cumulative Paid Net Losses and Defense Cost Containment Expenses Reported at Year End ($000 omitted)			
	2009	2010	2011	2012
2009	4,125	6,750	10,100	11,700
2010		3,300	8,200	14,800
2011			4,250	6,300
2012				7,400

a. (2 points)

Calculate the 10-year loss development table that would be included in the insurer's 2012 10-K.

b. (0.75 point)

Discuss the historical accuracy of the company's recorded loss and DCC reserves since inception.

24. (4.75 points)

A qualified actuary has been appointed to complete a Statement of Actuarial Opinion (SAO) for an insurance company for the year ending December 31, 2012. Given the following information for the insurance company (all figures in millions of dollars):

Net recorded loss and LAE reserve	1,250
Statutory surplus	400
Net income	250
Total adjusted capital	400
Authorized control level risk based capital	150
Low end of actuary's rate of unpaid loss and LAE	1,100
High end of actuary's range of unpaid loss and LAE	1,320
Actuary's central estimate	1,200

a. (2.5 points)

Propose three options for a materiality standard to be used with this SAO. Select one option and justify the selection.

b. (0.5 point)

Identify two places in the SAO where the selected materiality standard must be disclosed.

c. (0.5 point)

Discuss whether or not there is a risk of material adverse deviation (RMAD).

d. (1.25 points)

Prepare the RELEVANT COMMENTS section related to RMAD using the selected materiality standard.

25. (2.25 points)

A qualified actuary has been appointed to complete a Statement of Actuarial Opinion (SAO) for an insurance company, for the year ending December 31, 2012. The actuary's selected materiality standard is 10% of carried reserves and carried reserves are $100 million.

In the following situations, determine what the actuary is required to disclose and where this disclosure is required.

a. (0.75 point)

The booked reserves are presented on a present value basis and the actuary believes that such discounting is likely to have a material effect on the results of the actuary's reserve evaluation.

b. (0.5 point)

The company participated in an underwriting pool. Another actuary reviewed the reserves for the pool, which is a significant portion of the company's reserves. The company's appointed actuary has reviewed the actuarial report for the pool and concluded that the pool's reserves are reasonable without performing independent projections for the pooled business.

c. (0.5 point)

The actuary received data from the insurance company's CFO. After conversations with the CFO, the actuary felt there were still issues with the data for general liability, which comprised $30 million of the company's reserves. The actuary chose not to rely on this data.

d. (0.5 point)

The actuary decided to change from a chain-ladder approach to a predictive modeling approach to estimate the unpaid claim liabilities. The impact of this change was estimated to be $25 million.

26. (2.5 points)

  a. (1 point)

  Identify two non-confidential pieces of information that appear in an Actuarial Opinion Summary, and identify another place where each piece of information could be found.

  b. (1.5 points)

  Provide two arguments against the statement: "The Actuarial Opinion Summary is unnecessary, because everything needed to assess the financial well-being of an insurance company can be found in the Annual Statement or in the Statement of Actuarial Opinion." For each argument, provide a specific example that highlights the utility of the Actuarial Opinion Summary.

27. (4.25 points)

    a. (1 point)

       Identify and briefly describe two tests used to assess the transfer of risk in a reinsurance contract.

    b. (0.5 point)

       Describe a situation in which one test might be recommended over the other.

    c. (1.5 points)

       Identify three data elements needed to perform the recommended test in part b. above and the purpose of each element.

    d. (1 point)

       Explain two practical considerations to keep in mind when conducting a risk transfer analysis.

    e. (0.25 point)

       Briefly describe why a contract that fails risk transfer tests might qualify for reinsurance accounting.

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

QUESTION		POINT VALUE OF QUESTIONS	(a)	(b)	(c)	(d)	(e)	(f)	(g)	
1		3	1.5	0.5	0.5	0.5				
2		1.75	0.25	0.5	0.5	0.25	0.25			
3		4	3	0.5	0.5					
4		3	0.5	0.5	0.5	0.5	0.5	0.5		
5		2.75	0.5	0.75	1.5					
6		3.5	0.25	2	0.5	0.75				
7		2.25	0.5	0.5	0.5	0.25	0.5			
8		4	0.5	2	1.5					
9		2.25	1.25	1						
10		2	0.5	0.5	0.5	0.5				
11		2.5	1	1	0.5					
12		1.75	0.75	0.5	0.5					
13		2	1	0.5	0.5					
14		5	2.25	1.75	1					
15		2.5	1.5	1						
16		4.5	1.5	1.75	0.5	0.75				
17		4	2.5	0.5	1					
18		6	2.25	3.25	0.5					
19		4.25	1.5	0.5	2.25					
20		5.25	1.75	2.25	1.25					
21		3	0.5	1	1	0.5				
22		1.25	0.75	0.5						
23		2.75	2	0.75						
24		4.75	2.5	0.5	0.5	1.25				
25		2.25	0.75	0.5	0.5	0.5				
26		2.5	1	1.5						
27		4.25	1	0.5	1.5	1	0.25			
TOTAL		87								

GENERAL COMMENTS:

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

EXAM STATISTICS:

Number of Candidates	539
Available Points	87.00
Pass Score	58.75
Number of Passing Candidates	221
Effective % Passing	43.16

QUESTION 1	
TOTAL POINT VALUE: 3	**LEARNING OBJECTIVE: A1**
SAMPLE/ACCEPTED ANSWERS	

Part a: 1.5 points

- Comprehensibility of Pricing – the high risks will understand better why they are high risk and hopefully engage in risk / loss control practices
- Reduced information risk – the investors demand higher return for unknown risk. The model will make the risk clearer so it could reduce the investors return, reduce the insurance price
- Stable pricing: the price won't change as volatile as original excess wind method after a big cat.
- Fair pricing – more accurate information will reduce subsidies
- Rational Behavior – if consumers are charged the correct amount, they will take price into account and act accordingly
- Better method than alternative (excess wind procedure) as it is based on scientific / meteorological analysis

Part b: 0.5 point

- Regulator could require a legal affidavit from insurer attesting that the user has not manipulated the model
- Regulator could require a formal opinion from modeler about the proper use and execution of the model
- Modelers can send regulators range of values for different characteristics (ex. Deductible option, construction, etc.)

Part c: 0.5 point

- Loss of policyholders – they will move to competitors with cheaper rates who did not inflate costs
- Inflated costs may increase costs of reinsurance
- Inflated loss estimates may increase the need and cost of reinsurance, adversely impact earnings, put pressure on stock price
- Assume manipulation to increase rates: would put downward pressure on financial ratings

Part d: 0.5 point

- Compare actual loss from historical events to modeled results of the same events
- The regulator can also send a group of experts (actuaries, engineers, etc.) to the modeling facility and they can report back on the validity of the assumptions without releasing proprietary information
- Compare losses by construction or geographical area to actual damageability relativities
- Compare statistics like mean wind speed and barometric pressure in the model to those actually experienced

EXAMINER'S REPORT

The question asked candidates to demonstrate knowledge gained from the syllabus readings. Generally the candidates scored well on parts B, C and D. Part A asked the candidates to describe three benefits of using cat modeling and many candidates simply listed the benefits or did not provide an adequate description of the benefit provided.

Part a
Most candidates were able to provide an accepted benefit of cat modeling (e.g., listing "Comprehensibility of Pricing"), but many candidates lost points by not describing the benefit (e.g., "high risks will understand better why they are high risk and hopefully engage in risk / loss control practices"). Additionally, some candidates would not match the description of the benefit to the benefit that was listed or repeated answers. Some candidates listed properties of catastrophe models without explaining the benefit of those properties. Other common answers not receiving full credit included how catastrophe models address changing demographics and construction types over time and that similar models are already in place in the reinsurance/financial industry.

Part b
Most candidates received full credit for this question. Candidates sometimes provided the correct answers for part d as the response for part b.

Part c
Most candidates scored well on this part. Common errors referenced an impact on the RBC ratio or changes to loss reserves.

Part d
Candidates had some difficulty with this part, but many candidates were able to get at least partial credit. There was some confusion between responses for part b and part d for several candidates. Incorrect answers generally discussed methods to test a company's use of a catastrophe model and not how to validate the model itself. Other candidates did not fully explain their answers, or listed two methods that were very similar. Common errors included answers suggesting the regulator compare to other models, other insurers, or get a range of loss estimates for different policy terms from the model vendor.

QUESTION 2	
TOTAL POINT VALUE: 1.75	**LEARNING OBJECTIVE:** A1
SAMPLE/ACCEPTED ANSWERS	

Part a: 0.25 point

There were numerous correct answers on this part. This sample of correct answers reflects the group:
- Law constructed by the NAIC as guideline for state legislators.
- To streamline state regulatory process, NAIC drafts model laws and state regulators review and modify or adopt as is.
- A model law is a law developed by the NAIC which is suggested for use in all states. The states can adopt, decline or modify the law.
- Laws written by the NAIC. Not actual laws. Suggestions for regulators to adopt.
- A model law is a consistent law developed by the NAIC for adaptation by the state in order to promote uniformity among states.
- NAIC promulgates model law as a basic standard for state DOI. Not mandatory though.
- Uniform law created for use of different states.
- Laws made by NAIC that can be used as a template when states making their own laws.
- An industry standard produced by the NAIC with the intent that states adopt in full or adapt to the needs of their states.
- Model law is a law that is promulgated by the NAIC. They draft a law and then suggest that the individual states legislate the model law.

Part b: 0.5 point

For full credit, a candidate had to describe two ways that states benefit from model laws. We accepted numerous answers. Here is a sample of correct answers, of which a candidate had to have two:
- Sates benefit each other by having the same or similar laws.
- States benefit by having an organization that does the necessary research and drafting work that an individual state might otherwise have to do.
- Streamlines the legislative process.
- Save time and money.
- Easier for regulators to peer review.
- Easier to customize a law than start from scratch.
- Helps for NAIC accreditation.
- Easier to monitor insurers domiciled in other states.
- Easier to pass the law.
- Easier for states to regulate multi-state insurers.
- Language of the law is tested
- Become aware of legislation they had not realized they needed.
- Keeps states up-to-date with changes in the regulatory environment
- Laws address issues common across states.
- Model laws are higher quality.
- NAIC helps with law interpretations.
- May help prevent federal involvement.

Part c: 0.5 point

For full credit, a candidate had to either describe in detail one way or briefly describe two ways that insurers benefit from model laws. We accepted numerous answers. Here is a sample of correct

answers:

One answer in detail:
- For insurers licensed in more than one state, compliance with varying state standards is much less expensive if the standards are uniform.
- Law will be consistent across states, so multi-state insurers need not spend to comply with differing laws across states.
- Insurers benefit from model laws because model laws provide uniformity across states regarding regulation. This alleviates insurers from excessive costs for filing varying documents.

Two answers in detail. A candidate had to have two for full credit:
- Lowers cost of entry into a new state/product.
- Lowers cost of monitoring differing laws in different states.
- Insurers don't have to push to get certain legislation considered.
- Policy forms tested and approved.

Part d: 0.25 point

There were numerous correct answers on this part. Here are examples of correct answers:
- Meet their state's particular needs
- Coordinate them with other laws.
- Parts conflict with other laws.
- May modify because of similar laws.
- To attract captive business.

Part e: 0.25 point

There were numerous correct answers on this part. Here are examples of correct answers:
- An individual state legislature views a particular model law as inappropriate or unnecessary because other state laws sufficiently address the issue.
- State legislatures have many matters to consider
- Legislators might view NAIC model laws as lower priorities than other matters.
- NAIC is usurping legislative process.
- Detrimental to economy or insurance industry in the state.
- Political pressure against the law.
- Law does not apply to the vast majority of insurers or insureds.
- May be another item on the (NAIC) agenda
- Legislature may disagree with the intent of the law.
- Legislature feels law does not improve anything.
- States don't have the manpower/resources to keep up with NAIC model laws.

EXAMINER'S REPORT

Part a
- The candidate was expected to know that model laws were guidelines that states could pass, modify, or not pass.
- For full credit, the candidate had to recognize that these laws were recommendations that states needed to decide how to respond to.
- The most common mistake was not mentioning that states needed to decide what to do with the model laws.

Part b
• The candidate was expected to be able to describe two ways that states benefit from model laws.
• The candidate had to describe two ways that states benefit from model laws.
• The most common mistake was writing "uniformity" or "consistency" without an explanation about <u>how</u> that benefits the state.
• We did not give credit for the answer "Improves solvency regulation".

Part c
• The candidate was expected to be able to describe how insurers benefit from model laws.
• For full credit, a candidate had to either describe in detail one way or briefly describe two ways that insurers benefit from model laws.
• We did not give credit for the answer "easier", without more explanation

Part d
• The candidate was expected to be able to describe why states might modify a model law.

• Candidates either received full credit or zero due to the fact that this was a 0.25 point question. Most candidates performed well on this question. Those that received zero credit had responses such as:
   o "Feds usurping state power"
   o "NAIC was intruding on their process"
   o "to be consistent with other states"
   o "answer addressed specific points, use & file, age, sex, etc.".

Part e
• The candidate was expected to be able to describe why states might not adopt a model law.
• Those that answered the question did well, but it appears some candidates forgot to answer it.

QUESTION 3	
TOTAL POINT VALUE: 4	**LEARNING OBJECTIVE: A1,A2,A4**
SAMPLE/ACCEPTED ANSWERS	

Part a: 3 points

Regulatory Jurisdiction

- I would have regulation remain at the state level. The primary reason is that there are benefits to the duplication, peer review, and diversity of perspectives that are realized by each state having authority. These benefits include the reduction of fallibility capture and forbearance.
- Should be regulated by the states by the states. This gives states the power to enact laws and regulate based on each states unique characteristics- population, type of risks, regulatory/political environment, types of insurance companies that operate in the state, etc.
- I'm assuming regulation is currently at the state level. States; if it isn't broke, don't fix it. Substantial cost to move regulation to federal level.
- States have jurisdiction over business of insurance. The current state based system did better than the fed regulation of banks during financial crisis.
- Federal with congressional oversight. Insurance should be regulated by the federal government, subject to regulations as deemed necessary or desirable by acts of congress. A Federal Dept. of Insurance shall be created to regulate the insurance market. Federal oversight has many benefits: one voice in international debate/discussion, reduce cost and complexity of compliance, quickly react to changes in insurance market.
- I would use a federal jurisdiction for the primary regulatory authority of insurance. This would help centralize regulatory power and deliver uniform laws and regulations for all insureds

Duties of Regulators

- License insurers, financial reporting review of insurers, and periodic examinations. The constant monitoring of insurers, from their formation to their on-going operation, will ensure adequate risk management is in place.
- Regulators must first protect the consumer's benefit, promote competitive market, and cooperate and streamline regulation among other states. A few examples include: ensure coverage is available and affordable, rates are adequate, monitor consumer complaints, and ensure accreditation of state department of insurance.

Rate Regulation

- A use and file system would be best. Competition is best regulator of insurance so we don't want too much regulation of rates. However, we should make sure they are not discriminatory, thus use and file to check that. Still, admin costs shouldn't be too high for this.
- Rate regulation would be competitive file and use system. This would allow regulators to monitor filings, but allow competition to be prime regulator.
- Open competition with No File laws will be the rate regulation method. Open competition provides incentives for companies to charge the actuarially fair rate and provide efficient services due to competition. Prior approval increases administrative costs and negatively effects coverage availability.

- Should differentiate by LOB. Certain lines like Ocean Marine have diversified risks and knowledgeable consumers. Should have minimal rate regulation and rely on competition. While some other lines such as WC, can have a closer rate monitoring as insurance is compulsory, rating classifications are complicated, and affects most workers and employers.
- Prior approval. The insurers may charge high rate to gain excess profits, especially when the purchase of insurance is compulsory.

Solvency Regulation

- Companies should have internal models that dictate solvency requirements. Regulators can check these models. Companies understand their own risks best, and this creates culture of risk management. However, there should be IRIS ratios as well, just to ensure possible solvencies are recognized early.
- ORSA – the company is in the best position to assess its own risk and manage their risk. The regulators can review the ORSA report and take necessary actions if required. The companies have strong incentives to control their risk and stay solvent.
- Each state would need to be accredited to monitor the solvency of each insurer. The accreditation program would ensure that the solvency of insurers was being monitored consistently among the states and would help detect financially troubled insurers before it became too late for the regulators to jump in and help out.
- Solvency regulation will be a combination of US system and Solvency II. US system has advantage of rules based and prudent person but Solvency II has internal models which promote culture of risk management and better align with firm's risks. Combination can take best of both systems.
- The RBC method seems like a good method. It evaluates many different risks that the insurers are subject to and provides clear instructions on how regulators should act based on the result. Perhaps it would be best to add in a catastrophe provision which RBC does not currently have.
- We would stick with SAP accounting as it provides a conservative view of companies financial which is very important as we don't want them going insolvent thus harming our citizen.
- Use multiple procedures involving financial examination, IRIS test and RBC ratio to ensure detection of problems insurers as early as possible and make sure companies are complying to minimum capital requirements.
- Approach similar to Solvency II where oversight is based both as a formulaic approach and a principles-based approach. This structure would consider both held reserves and capital, as well as management and risk mitigation culture.
- IRIS type ratios that monitor certain aspects of a company's solvency. These allow a consistent, objective view of a company's solvency. Regulator action can be approved after failing a certain number of ratios.
- Minimum capital requirements will be put into place to ensure the company has funds to pay claims. Also, reserves will be reviewed so that each company is prepared to pay future claims.

Part b: 0.5 point

- Companies should have internal models that dictate solvency requirements. Regulators can check these models. Companies understand their own risks best, and this creates culture of risk management. However, there should be IRIS ratios as well, just to ensure possible solvencies are recognized early.
- ORSA – the company is in the best position to assess its own risk and manage their risk. The regulators can review the ORSA report and take necessary actions if required. The companies have strong incentives to control their risk and stay solvent.
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- We would stick with SAP accounting as it provides a conservative view of companies financial which is very important as we don't want them going insolvent thus harming our citizen.
- Use multiple procedures involving financial examination, IRIS test and RBC ratio to ensure detection of problems insurers as early as possible and make sure companies are complying to minimum capital requirements.
- Approach similar to Solvency II where oversight is based both as a formulaic approach and a principles-based approach. This structure would consider both held reserves and capital, as well as management and risk mitigation culture.
- IRIS type ratios that monitor certain aspects of a company's solvency. These allow a consistent, objective view of a company's solvency. Regulator action can be approved after failing a certain number of ratios.
- Minimum capital requirements will be put into place to ensure the company has funds to pay claims. Also, reserves will be reviewed so that each company is prepared to pay future claims.

Part c: 0.5 point

- It will need some variations due to the capital structure and risk natures of reinsurers. For instance, capital requirement may be higher for reinsurer due to the exposure to CAT events
- Yes. Reinsurer usually present in multiple state. Need a more uniform control on reinsurers. State-based regulation may need to be modified.
- Yes, because regulators are primarily located outside the US, there would need to be a framework established to regulate them.
- It would not need to. Reinsurers could play by the same rules. One could rationalize that

"unauthorized" reinsurers aren't as safe so shouldn't be used, or "our" regulated reinsurers are with the cost.

- Many reinsurers are overseas, so framework needs to address lack of information and difference in solvency standards to the RBC as well as accounting differences
- (Federal jurisdiction selected in part a) No. I think it works equally well for reinsurers.1 regulator to get approval from, easy interface internationally helps reinsurers as many are multinational.
- No. There would be only one uniform law for all reinsurers (internationally & domestic). This would allow insurers to obtain reinsurance in an easier fashion and not require collateral for unauthorized reinsurers, since it is costly.
- Would require less emphasis on rate regulation as we have sophisticated buyers who can determine how fair the rate being charged is. Also somewhat less emphasis on solvency regulation as the sophisticated buyers will consider the financial strength of its reinsure
- No, reinsurers are also insurance companies and should fall under similar regulatory requirements. They should not have any less stringent requirements because reinsurance defaults and insolvencies have led to many primary insurance company insolvencies.

EXAMINER'S REPORT

Overall the candidates performed well on this question. The candidate was expected to generally know the various forms of regulation and the reasons for each. The expectation of creating a new system from scratch seemed to challenge some candidates. Some candidates started with the current system of US regulation without making the assumption explicit. Others, it seems, were looking to simply regurgitate parts of the syllabus without thought to what was really being asked. That said, most who attempted the question did quite well.

Part a

The candidates generally did well on the creation part and poorly on the justifications. Many papers did not supply justifications for any parts. As mentioned above the candidates were expected not only to know the forms but the reasons. Another common error, as mentioned above, was the unwritten assumption that the question was asking the candidate to change the current US system. For example under the duties of regulators we had many candidates answer "the same as they are today." This fails to display knowledge of the material.

Part b

Candidates did generally well on this section. Most were able to synthesize their system with the global perspective or recognize why there system would come up short. Some candidates just put a judgment (good or bad) without a discussion.

Part c

Candidates generally did well on this section, but not quite as well as section b. Again, many candidates missed the justification part of this question. An answer of "it would not require changes" or "it would work equally well for reinsurers" was insufficient without further reasoning.

QUESTION 4	
TOTAL POINT VALUE: 3	**LEARNING OBJECTIVE: A.4**
SAMPLE/ACCEPTED ANSWERS	

Part a: 0.5 point

- Sherman Antitrust Act <u>prohibits collusion</u> in <u>attempts to gain monopoly power</u>. Any activity that restrains trade or commerce and any attempts to monopolize are illegal.

Part b: 0.5 point

- The Sherman Antitrust act ruled that insurers <u>could no longer form groups</u>, as in the SEUA and similar groups, <u>to control rates and coverages</u>
- This would be <u>prohibited </u>since it would be considered <u>collusion (or rating in concert)</u>

Part c: 0.5 point

- Companies could collude and attempt to gain monopoly power.
- Companies could fix premium rate and agent commissions.
- Companies could use boycott, coercion and intimidation.
- Additional Acceptable Answers:
- Reduce competition which could lead to fewer options for customers and/or excessive profits/high prices
- Standardized forms may limit coverage or stifle innovation
- No bureaus for small companies to access data, which could lead to inaccurate rates or insolvency
- Insurance companies could force the tying/bundling of insurance products (e.g. have to buy auto with home) or more coverage than they need

Part d: 0.5 point

- Paul v. Virginia – <u>Bureau ratemaking allowed</u>
- US v. South-Eastern Underwriters Association – <u>Bureau ratemaking not allowed (federal anti-trust laws apply)</u>

Part e: 0.5 point

- The new legislation <u>prohibits any state other than the home state of an insured to require licensing </u>of a surplus lines insurer;
- Taxing of multistate surplus lines risk is to be standardized and <u>premium taxes need only be paid in the home state</u>
- <u>Removed "Diligent Search" requirement</u>, requiring a thorough search of the admitted/voluntary market before placing business in non-admitted/surplus lines. This lead to greater access to market for non-admitted insurers

Part f: 0.5 point

- If the ceding insurer's state of domicile is accredited by NAIC or has solvency standards similar to those mandated by the NAIC, then <u>other states cannot deny credit for the reinsurance</u>. Thus, a ceding insurer <u>only has to satisfy the rules of one state (home state).</u>

EXAMINER'S REPORT
Part a
• Candidate was expected to know that Sherman Anti-Trust prevents collusion in an attempt to gain monopoly power • Candidate was expected to mention both collusion and monopoly power in the answer to obtain full credit • Common error: Candidate's answer did not include the original definition of Sherman Antitrust, but rather Sherman Anti-Trust after the impact of subsequent laws, specifically the McCarran Ferguson Act
Part b
• Candidate was expected to know that the act of colluding to set rates was illegal • Candidate was expected to respond noting that both the act was illegal and why (e.g. collusion, ratemaking in concert) to obtain full credit • Common error: Candidate said that the act would be allowed and/or candidate did not assess situation <u>solely</u> based on Sherman Antitrust, but rather Sherman Anti-Trust after the impact of subsequent laws, specifically the McCarran Ferguson Act, which limited the application of Sherman Antitrust to insurance in only specific situations (e.g. boycott, intimidation, and coercion)
Part c
• Candidate was expected to know that if the Sherman Antitrust act was repealed, several negative impacts could happen to insurers. • Candidate was expected to respond by identifying what the Sherman Antitrust act prohibited and what the impact would be if it were repealed to get full credit. Answer needed to include mention of monopoly power, boycott, intimidations, fixing rates/commissions, reduced competition, standardized forms, lack of data to develop rates, tying/bundling of insurance products) to receive full credit • Common error(s): Candidate did not tie the negative impacts directly to Sherman antitrust act (e.g. "Rates will increase" opposed to "<u>Companies could collude</u> to set rates/coverage which could cause rates to increase")
Part d
• Candidate was expected to know that bureau ratemaking was allowed under Paul v. Virginia and banned under US vs. SEUA. • Candidate was expected to respond by noting whether bureau ratemaking was illegal or allowed to receive full credit • Common error(s): Candidate did not specifically mention bureau ratemaking in the answer (e.g. "Federal antitrust laws apply" opposed to "Bureau Ratemaking not allowed under US vs. SEUA since federal antitrust laws apply")
Part e
• Candidate was expected to know that the Dodd-Frank Act had several benefits for surplus lines insurers • Candidate was expected to respond by noting two of the benefits (only required to have licensing in home state, only need to pay premium taxes in home state, diligent search

	requirement lifted) to receive full credit • Common error(s): Candidate gave vague answers that did not specifically mention the key benefits listed above (e.g. "Simplified taxes" opposed to "Taking of multistate surplus lines risks was standardized and premium taxes only need to be paid in the home state"
Part f	
	• Candidate was expected to know that the Dodd-Frank Act had specific benefits for ceding insurers that were different than the benefits for surplus lines insurers • Candidate was expected to respond by noting the key benefit (only has to satisfy home state's rules to receive credit for reinsurance) to receive full credit • Common error(s): Candidate gave vague answers that did not specifically mention the key benefit listed above OR candidate gave answers for part e which were not specific to a ceding insurer.

QUESTION 5	
TOTAL POINT VALUE: 2.75	**LEARNING OBJECTIVE:** A1
SAMPLE/ACCEPTED ANSWERS	

Part a: 0.5 point

Candidate received points for any two of the following concepts:
1. reflect differences in expected costs, loss costs, frequency, severity
2. appropriate for risk differentiation
3. increases availability
4. won't lower rate level overall if not used
5. lowers pricing risk and thus overall costs
6. objective and available measure
7. difficult to manipulate
8. reduces subsides between high and low risks

Part b: 0.75 point

Candidate received points for any three of the following concepts:
1. weakness in credit reporting system
2. errors in reports due to identity theft
3. disproportionately affected by certain life events: divorce, recent citizen, disabled
4. discriminates against those who don't use credit
5. opaque to consumers
6. disparate impact to select ages, race, and religious groups
7. indirectly measures socioeconomic status
8. privacy concerns
9. reflects frequency not severity, claims reporting pattern
10. studies didn't use premium

Part c: 1.5 points

Candidates should have fully addressed each stakeholder discussing some or all of the following ideas:

Consumers:
1. Credit scores may decrease (uniformly, in segments)
2. Premium increases temporarily, assuming companies adjust accordingly
3. Inherent riskiness hasn't changed
4. Premium increases permanently, assuming loss costs increase
5. Might not be impacted if company does not rerun score for renewal
6. Rate can go up if score decreases more than average (person lost job, etc.)
7. Might drop coverage

Insurance Companies:
1. Will see a change in credit score distribution, uniform or otherwise
2. Will need to examine relativities among risks
3. Will need to decrease/increase overall loss cost estimate, depending if loss costs are assumed to have changed or stayed the same

4. similar to AOI on homeowners
5. Will reconsider relativities/loss costs due to competitive pressure, adverse selection, loss of market share
6. Might be temporary increase in profit due to increased rates

Regulators:
1. Increased complaints from consumers
2. Need to apply additional scrutiny to rate filings
3. may reexamine use of credit scores in rating models
4. May see availability decrease and increased residual market

EXAMINER'S REPORT

Candidates were expected to know the potential advantages and disadvantages of using credit score as a rating variable in ratemaking. Candidates performed well on part A and part B. Part C was more challenging, requiring a precise description of assumptions and resulting impacts to stakeholders. Candidates who were most successful used precise language and demonstrated clear connections between economic/market forces and the resulting impact on each stakeholder.

Part a

Candidates who failed to obtain full credit often used vague language in very brief sentences/fragments. These candidates may or may not have known the concepts required. For example, writing "useful in rating" is not a specific concept worthy of full credit.
Other common mistakes include:
- Providing two answers that were essentially the same thing. For example, saying "tell high risks from low risks, and reflect expected loss costs" are two ways of saying the same thing;
- Stating how insurers use credit instead of arguing why they should use credit; and
- Providing reasons why credit should not be used (potential misread of the question).

Part b

Candidates who failed to obtain full credit often used vague language in very brief sentences/fragments. These candidates may or may not have known the concepts required.
Other common mistakes include:
- Providing two answers that were essentially the same thing;
- Providing an answer that was not mentioned in the McCarty paper

Part c

Candidates were expected to state their assumptions on how the economy would affect scores/losses and explain the effects to the listed stakeholders. Candidates could assume that credit scores decreased uniformly, as in the Kucera paper; however, credit was also given for alternate assumptions so long as the candidate effectively explained the resulting impacts.
Common mistakes include:
- Not fully/clearly explaining their responses.
- Providing conflicting responses. For example, writing "credit scores would change uniformly" before saying that "overall premium level won't change" (without a full

> explanation as to how both of those things could occur).
> * Not relating their response to credit scoring or to the economic downturn. For example, some candidates argued "premium levels won't change", but did not mention the impact of the economic downturn on credit scores and/or price levels.

QUESTION 6	
TOTAL POINT VALUE: 3.50	**LEARNING OBJECTIVE: A2**
SAMPLE/ACCEPTED ANSWERS	

Part a: 0.25 point

* Identify financially troubled firms based on various monitoring tools and prioritize examination schedules
* To monitor and examine insurer's financial health/solvency and ensure that regulators are alerted if there are signs of financial distress so that they can intervene as soon as possible
* Prioritize insurer for review based on solvency metric results
* The primary goal of the Analyst Team is to identify insurers that appear to require immediate regulatory attention
* Creates a national prioritization system using statistical analysis, a scoring system, and RBC to assign review levels for insurers
* Goal of NAIC Analyst Team System is to assess the solvency of insurers
* To identify insurers that may be in financial trouble before they are insolvent
* Identify at risk/troubled insurers

Part b: 2 points

* Overall Financial Condition (or Financial, Overall, or General) - one of the following:
  * Gross Premium to Surplus
  * Net Premium to Surplus
  * Change in Net Writings
  * Surplus Aid to Surplus
* Profitability Ratios - one of the following:
  * Two-Year Overall Operating Ratio
  * Investment Yield
  * Change in Gross Surplus
  * Change in Adjusted Surplus
* Liquidity Ratios - one of the following:
  * Liabilities to Liquid Assets
  * Agents' Balances to Surplus
* Reserve Ratios - one of the following
  * One-Year Reserve Development to Surplus
  * Two-Year Reserve Development to Surplus
  * Estimated Current Reserve Deficiency to Surplus

Part c: 0.5 point

* Similarities:

- o Both contain a series of calculated ratios
- o FAST contains many of the same ratios as IRIS
- o FAST covers many of the same dimensions as IRIS (Overall, Reserves, Profitability, Liquidity)
- o Both are measures used in determining insurer financial health
- o Both attempt to prevent insurer insolvencies by identifying weaknesses
- o Both attempt to detect areas of concern of company using financial statements
- o Both attempt to identify and prioritize companies for further examination
- o Both sets of ratios can be calculated from publically available information.
- • Differences:
  - o FAST contains more ratios than IRIS
  - o FAST measures relationships that IRIS doesn't
  - o FAST has more dimensions of measurement than IRIS (asset quality, affiliate investments, reinsurance, cash flows)
  - o FAST incorporates measures that IRIS does not (RBC Trend Test, Loss Reserve Projection Tools, Analyst Team System)
  - o FAST produces an overall score while IRIS doesn't
  - o Some IRIS ratios are displayed in the Statement of Actuarial Opinion/Annual Statement or are commented upon in the while the FAST ratios are not

Part d: 0.75 points

- • Analyst team does not have regulatory authority to take necessary action
- • Analyst team may not have sufficient time or resources to perform adequate review
- • No state can rely on one tools' results as state's only form of surveillance
- • Financial indicators cannot by themselves and without experienced interpretation, consistently identify insurers in need of regulatory intervention
- • Valid interpretation of tools' results depends on judgment of financial analysts & examiners
- • Cannot be intimately familiar with the unique risks of every insurer
- • Ratios may be outside the usual range due to unusual accounting methods, changes in corporate structure, restatement of prior periods, correction of errors, or other circumstances.
- • Doesn't incorporate certain risks not contemplated in the ratios and tools (CAT risk, Legal Risk, etc.)
- • Focuses on formulaic quantitative measures and does not focus on qualitative criteria
- • Results of tests can be manipulated by insurers to some extent by modifying reserves
- • Ratios & trends are valuable for identification but are not indicative, themselves, of adverse financial condition.
- • Analyst Team reports are intended only for analysis & are confidential.
- • Criteria for determining usual range values and usefulness of IRIS Ratios may not be valid for future experience in different economic periods.
- • Information contained in IRIS reports is not guaranteed to be accurate.
- • Do not have access to internal company data, only information made available to regulatory authorities and the public
- • Does not supplant the audit of an insurance company

- Does not provide insight as to whether the company's management has good internal management, systems, and controls in place
- Tools will not identify fraud, which can be difficult to uncover
- Regulatory Fallibility - Analyst Team may make mistake or use poor judgment in application of tools
- Regulatory Forbearance – Analyst Team or regulators may fail to take prompt and stringent action
- Regulatory Capture – Analyst team or regulators may have tendency to side with an interest group
- Decisions, such as licensing, should not be based on tools' results without further analysis or examination of the insurer
- May not have same access to information for non-US domiciled companies (particularly re-insurers who US domiciled companies may have ceded business to)
- Many tools only have visibility to financial results through past reporting dates and do not have visibility to real time risks as they emerge
- Analyst team does not have access to company management (ability to interview, ask questions, evaluate professional ability, etc.)

EXAMINER'S REPORT

This question focuses on several programs used by the National Association of Insurance Commissioners, namely the Analyst Team System (ATS), Insurance Regulatory Information System (IRIS), and Financial Analysis Solvency Tools (FAST). Candidates are expected to have substantial knowledge of the IRIS system, especially the IRIS ratios which are discussed by name several times on the syllabus and covered in detail in multiple syllabus reading. Candidates are also expected to be familiar at a higher level with the other NAIC programs and be able to demonstrate an understanding of the goals and overall approach of these other programs. Finally, candidates should be familiar with the general limitations of such programs.

Candidates could receive credit for most parts by simply restating information directly from the syllabus readings. This is particularly true of parts A, B, and C. On Part D, however, the candidate was asked to provide limitations of the ATS program. This part required candidates to apply discussion of limitations of regulatory programs in general to this specific program.

On the question as a whole, most candidates did not receive full credit. The primary reason is that many candidates skipped one or more parts of the question, especially parts C and D. Further, many candidates provided only partial answers for parts C and D. For example, part D asked for 3 limitations, and many candidates listed only 1 or 2. Additionally, this question asked for a large number of items about multiple NAIC programs, and many candidates answered the question well but made one or more small mistakes on an individual part. This was especially true on parts C and D which asked for lists of items on some NAIC programs that are likely less familiar to candidates.

A commonly noted mistake throughout the question is that some candidates seemed to confuse the details of various NAIC programs. For example, several candidates mentioned that the FAST program applies to nationally significant insurers only, but the program that focuses on nationally significant insurers is the Financial Analyst Working Group (FAWG), which is not asked about in this

question.

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

Part a

This part asks for the primary goal of the Analyst Team System. Candidates are expected to be able to describe in general terms the overall purpose of this program, which is discussed in several syllabus readings.

Candidates were expected to respond with a brief description that mentioned the identification and prioritization of insurers that required regulatory attention due to potential solvency concerns. As seen in the list of solutions above, not all of these elements needed to be discussed, but candidates needed to give some indication that a primary goal of the Analyst team was the identification of insurers potentially having financial problems.

Generally candidates performed well on this part.

Common errors included:
- Implying that the scope of the Analyst Team was restricted solely to "nationally significant" insurers
- Implying that the primary focus of the Analyst Team was market conduct related (adherence to filed rates, policy forms, claim handling procedures, agency licensing, etc.)
- Implying that the focus of the Analyst Team was the development and promulgation of accounting rules and standards
- Implying that the primary focus of the Analyst Team was the auditing of the work of state regulators

Part b

This part requires the candidate to demonstrate familiarity with the IRIS system including the dimensions of risks they intend to monitor and descriptions of the various IRIS ratios. These dimensions and ratios are discussed in several areas of the syllabus and are generally well known by actuaries. The candidate is expected to be able to describe the various dimensions of risks monitored and be able to provide an IRIS ratio example from each dimension.

Candidates receiving full credit were able to correctly identify all four dimensions and provide a specific example IRIS ratio for each. If a dimension was incorrectly identified, credit was still given for correct IRIS ratio example as long as another ratio for that dimension had not also been given credit.

Generally candidates performed well on this part.

Common errors included:
- Failing to correctly identify the four dimensions; in particular, failure to identify the "overall" dimension correctly
- "Leverage" was a common incorrect answer given a dimension. The examples of IRIS ratios given for this incorrect dimension included both ratios from the "overall" dimension such as GWP / PHS and ratios from the "liquidity" dimension such as "Adjusted

	Liabilities to Liquid Assets."
	• Providing multiple valid ratios from a single dimension without providing examples that covered all four dimensions. Only one ratio per dimension was given credit.

Part c

This part asks candidates to identify similarities and differences between the IRIS and FAST systems. Candidates are expected to be able to describe similarities and differences in the two programs that illustrate an understanding of the tools and processes underlying each system.

There is less specific coverage of the FAST system (and particularly the FAST ratios) on the syllabus than the IRIS system. While candidates are not expected to know all of the specific FAST ratios, they are expected to understand general similarities and differences between the two programs.

Candidates struggled with this part when compared to earlier parts of the question. Candidates performed very well in identifying a similarity between the two programs, but they generally had more difficulty in identifying a correct difference. A number of candidates left this answer blank when compared to parts a and b.

Common errors included:
- Indicating that one system was solely for Nationally Significant Insurers
- Indicating that either of the ratios incorporated Catastrophe Risk while another did not.
- Indicating that either system focused on qualitative issues such as quality and experience of management or business strategy.
- Indicating that either set of ratios could only be calculated using non-publically available financial information
- Indicating that either of the set of ratios were calculated continuously in real time.
- Indicating that either system incorporated mandatory regulatory intervention
- Indicating differences in the party responsible for preparation of ratios

Part d

This part asks candidates to identify limitations of the NAIC Analyst Team System. The candidate is expected to be able to describe limitations that demonstrate a familiarity and understanding of the tools and processes underlying the Analyst Team System and their potential shortcomings.

Generally speaking candidates receiving full credit needed to demonstrate an understanding of the shortcomings of the tools and processes underlying the Analyst Team System or regulatory systems in general.

Candidates seemed to have the most difficulty with this part of the question. A number of candidates left this part blank, and many of those candidates that responded provided only a partial answer (i.e. only one or two limitations were provided). Given the wide range of acceptable answers, candidates performed well on the portions of the question that they did answer.

Common errors included
- Indicating that the scope of the NAIC Analyst team was restricted to Nationally Significant Insurers or only to insurers of a certain size (apparently confusing the Analyst Team with

the FAWG group) • Providing responses that were constructively re-statements or re-wordings of previous responses	

QUESTION 7

TOTAL POINT VALUE: 2.25	LEARNING OBJECTIVE: A5

SAMPLE/ACCEPTED ANSWERS

Part a: 0.5 point

1. Bring suit in plaintiff friendly jurisdictions
2. Combining claimants in a class action lawsuit
3. Inclusion of many defendants in a suit – many of the defendants are "peripheral" and were not direct manufacturers of asbestos

Part b: 0.5 point

1. Inactive dockets: allow claimants who do not meet medical criteria now to still make claim later
2. Venue reform – stricter requirements for where claims can go to court
3. More strict medical criteria need to be met in order to place a suit
4. Laws limiting punitive damages
5. Restrict the extent to which lawsuits can be combined

Part c: 0.5 point

1. Its [evidence] potential rate of error
2. Whether the evidence can be tested
3. Whether it has been subject to peer review/published
4. It is generally accepted by the scientific community
5. Relevance – is it relevant to the case
6. What rules are in place to ensure proper application of expert method

Part d: 0.25 point

1. Scientific evidence was scrutinized more leading to more of it being dismissed
2. Judges became "gatekeepers" of admitting evidence
3. At first it resulted in less admitted evidence due to stricter standards. Over time lawyers adjusted strategies and admittance has leveled off

Part e: 0.5 point

1. Higher burden of proof following Daubert decision probably reduced asbestos claims settlement because there was higher scrutiny of fraudulent/unreliable evidence making it harder for evidence showing asbestos claim validity to be proven
2. Decrease frequency of cases as stronger expert evidence is needed. Increase claim expenses in each case as stronger evidence may cost more
3. May reduce claim settlements if fewer plaintiffs are allowed (fewer medically meet criteria) and as medical evidence submitted is subject to more strict review

EXAMINER'S REPORT

Part a

• A common error was listing attorney methods for obtaining clients (mass screening, advertising) rather than to list ways to maximize settlements for current clients • Mistakenly took actions that defendants are taking (e.g. abandoning settlement strategies) and associated those with plaintiff council
Part b
• Changed language of reform discussions from restrictions into absolutes: e.g. not allowing case consolidation or not allowing venue shopping • Question called for state reforms, but candidates often listed changes made by other parties (e.g. Manville Trust) • Candidates often listed goals of state reform, rather than an actual reform (e.g. to prioritize resources to worst cases first)
Part c
Candidates performed well on this section. The most common way candidates lost credit was to omit a second response. An example of a response that did not receive credit was: evidence "demonstrated to be true".
Part d
Candidates performed well on this section. Generally, for those that did respond, but still scored 0, the response was from misunderstanding the paper. Most common incorrect response was claiming attorneys are now just submitting less evidence in a lawsuit, or contradicting themselves in the discussion. Example: "less expert evidence is admitted into court since attorneys screen evidence more thoroughly".
Part e
Candidates were expected to provide both an effect of the Daubert decision on asbestos-related claim settlements, and a description for why this effect would occur. Common mistakes on this section were generally to provide either a cause or an effect, but not both.

QUESTION 8	
TOTAL POINT VALUE: 4.00	**LEARNING OBJECTIVE: B2, B3**
SAMPLE/ACCEPTED ANSWERS	

Part a: 0.5 point

- "May actually increase residual market because the stigma of being rejected by the voluntary market is removed. An insured does not know that they have been ceded to the reinsurance facility."
- "If companies were allowed to price as they see fit, moving to a Reinsurance Facility should reduce the residual market size as they would be willing to retain more of the risk."
- "Since insurers can charge their own rates for each applicant, they have the ability to charge more adequate rates → less likely to cede business to facility → size should decrease."
- "It will reduce the size of the residual market by only allowing insurers to cede so many risks to the reinsurance facility."
- "Since the Reinsurance Facility uses Insurer's own rates, which are not high enough for high risks, insurers will pass these risks to the Reinsurance Facility, increasing the size of the Residual Market."

Part b: 2 points

Personal Auto Insurance:
- The government encourages full participation through states laws requiring liability coverage. Cross-subsidies are imposed by residual market mechanisms and restricted rating variables.
- Purchase of insurance is required by law, which is the method facilitating full participation in the plan. The government also creates residual market mechanisms to help high-risk insured obtain coverage, increasing participation and creating a cross subsidy at the same time, as rates in the residual market are generally lower than the costs, and these costs are passed onto primary insurers, who build it into their rates, creating the cross subsidy."

Saving for Retirement:
- By creating the OASDI tax, the government is facilitating full consumer participation in saving for retirement. Since this program is compulsory, everyone pays in. The benefit distribution formula is slightly skewed to provide greater benefit to lower income workers, thus creating cross subsidies where higher income workers end up paying for this greater benefit.
- Social Security program is compulsory for all workers, so that guarantees full participation. Government imposes cross subsidies by giving a minimum floor of income and weighting benefits toward low income and large families.
- Everyone is automatically enrolled in Social Security. The retired generation is paid for by the working generation.
- Social Security has mandatory participation, so all workers must pay. It uses cross-generational subsidies: current workforce pays the benefits of the retired workforce.

Part c: 1.50 points

FOR:
- Use of actuarially fair rates provides incentive for higher-risk insureds to control losses.
- Low-risk no longer have to subsidize for high-risk in residual market

- It promotes availability of coverage as insurers more willing to offer coverage if they can charge appropriate rate.
- Cross-subsidies are a crude method of subsidizing low-income drivers; government should provide financial assistance directly if necessary.
- The rate should reflect all the costs of a risk transfer for an individual risk.
- It will reduce adverse selection since everyone is being charged actuarially fair rates.
- Facilitates competition as there now becomes motivation/opportunities for insurers to develop innovative rating plans.

AGAINST:

- There should be a limit to what one should pay for insurance.
- Some high risk insureds may choose to go without coverage → further burden on overall market as not collecting any premium
- If insurance is compulsory, it must be available & affordable to all.
- Actuarially fair rates may harm low & middle income insurance buyers

EXAMINER'S REPORT

Part a

- This question involved a hypothetical situation for which there were limited references in the syllabus. A correct answer would require making a number of assumptions and explaining how those assumptions would lead to a certain outcome. A wide variety of answers were accepted because the question allowed candidates to make a selection and use any argument to support their decision.
- Candidates were expected to understand how a reinsurance facility and an assigned risk plan work, the process by which an insured will be placed in one or alternatively in the voluntary market, and that the reinsurance facility is a residual market mechanism.
- We accepted answers that provided a logical construction of why the residual market would increase or decrease. Many candidates did not understand that involuntary market rates would change under a facility (as they would be the issuing company's rates) or that the method of placement in the residual market would be changing.

Part b

Regarding auto insurance, candidates were expected to know

- that state governments establish residual market mechanisms to provide auto insurance to those who cannot obtain it in the voluntary market;
- that some form of auto insurance is generally compulsory for those who own automobiles;
- that governments generally require residual market mechanisms to charge rates that are inadequate for the risks insured and that the rate deficiency is spread to the voluntary market, or that governments require companies to charge rates that are inadequate for some classes they feel could not otherwise afford auto insurance and require other classes to subsidize these classes.

Regarding social security, candidates were expected to know

- that social security is compulsory for virtually all wage-earners;
- that the program operation and benefit formula pay benefits that are not proportional to contributions, generally subsidizing lower-income workers, disabled, workers with

families, etc., or that taxes are paid by one generation to provide benefits to another.

Common mistakes were to discuss only one line of insurance but not the other, to fail to mention either the compulsory nature or cross-subsidies, or to fail to discuss the method of cross-subsidization.

Part c

There were a wide range of possible answers to this part, which are mentioned above. Candidates were expected to know at least 3 of these arguments for or against.

Candidates that did well gave three arguments "for" or "against" or gave a mixture while correctly labeling which side the argument supported.   A common mistake was to label an argument one way while giving an argument in the opposite direction (i.e. labeling an argument "for" that was in fact an argument "against").

One common mistake was to cite the answer (appearing in one reading) that "An equal sharing of costs is fairer than one based on relative risk." This reading presented this not as an established fact but as a theory advanced by some proponents. We expected an actuarial candidate to take a more nuanced view of this (for example, would one sensibly argue that the driver of a Ferrari should pay the same as the driver of a compact car?).

QUESTION 9	
TOTAL POINT VALUE: 2.25	**LEARNING OBJECTIVE: B1/B2/B3**
SAMPLE/ACCEPTED ANSWERS	

Part a: 1.25 points

Design of Program - Funding Sources:
• Actuarially sound insurance premium paid by buyer/taxes
• Premium subsidized by government
• Ability to borrow from treasury if costs exceed premiums
• Reinsure private mortgage insurers that offer coverage
• Exclusive Insurer arrangement

Government Goals
• Convenience
  • Buyer does not have to shop around for insurance
  • Ease of being covered by insurance program
    i.e., Payroll taxes, Automatic Enrollment, % of Outstanding Enrollment, Included in Mortgage Payment

• Greater efficiency
  • Government insurer costs are lower due to the unnecessary nature of marketing costs, commissions, and lower administrator costs, as well as the lack of taxes
  • Private mortgage insurers have incentives to work more efficiently
  • An experienced insurance operation (i.e., claims organization already established)

• Social purposes
  • Encourages banks to offer more loans to lower qualified applicants
  • Works to enable housing sales
  • Encourages buyers that may not be qualified
  • Protects the overall economy by protecting against the systematic risk of all banks defaulting at once.

Part b: 1 point

• Principle 2: A rate provides for all costs associated with the transfer of risk.
  - Doesn't include all costs because governments don't need to account for cost of capital
  - It does include all costs due to governments not needing to account for cost of capital, because the government can borrow against general revenue
  - Private insurance structures: All Costs - Cost of loss, expenses, and profit load were included in price
  - To fulfill the government goals of convenience and efficiency, the rate does not account for all costs associated with transfer of risk

• 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.
- Uniform Premium structure is not an actuarially sound estimate for individual risk transfer due to better risks subsidizing worse risks
- It would violate the principle because cross-subsidization of risk given the % of loan fee wouldn't satisfy the individual risk transfer requirement
- Subsidized risks do account for all future costs
- The rate is unfairly discriminatory because it is based on the insured's credit score, which is a discriminatory rating factor according to regulators
- To fulfill the government goal of social purpose, the rate would be inadequate

EXAMINER'S REPORT

The question being asked tests a higher level of Bloom's knowledge on Government Regulation & Insurance and the application of key actuarial principles and concepts.

Part a

The candidate was expected to provide a program design that detailed the funding of that program. They also then needed to provide a brief explanation as to whether their program met the 3 government goals and why it met or didn't meet those goals. Many candidates gave a brief explanation of their program, but lacked either providing program details and/or the funding details that were asked to gain full credit. Candidates generally did well, but where they tended to lose credit was not fully explaining the funding sources or relating one of the goals of government insurance back to their program design. Most candidates were able to correctly identify how their program either satisfied or didn't satisfy the goals of government participation in insurance for at least 2 of the 3 goals.

Part b

The candidate was first expected to identify whether their program met the ratemaking principles, on their own merits given their selected program design and funding. Then, they were expected to fully explain why their program did or didn't meet the ratemaking principles. Many candidates were able answer if their program did or didn't meet the ratemaking principles, but either incorrectly supported their answer or struggled to fully explain why their program did or didn't meet those principles.

For example for Principle 2, which asked about a rate providing for all costs associated with the transfer of risk, many candidates said it would provide for all costs but failed to explain further or their explanation was simply rewording the question and failed to provide any new information.

- "Yes, the rate would provide for all costs associated with the transfer of risk"
- "Yes, since this rate provides for all costs associated with the transfer of risk, this principle would be met."

The issues were similar for Principle 4, which asked about the rate being reasonable, not excessive, inadequate or unfairly discriminatory. Most common mistake was supporting the answer by

restating the question. Another frequent mistake was contradicting their answer in their explanation such as saying the program did meet the principle, but explaining it with an explanation that would violate the principle.

- "Yes the rate would be reasonable, not excessive, inadequate or unfairly discriminatory since the government would subsidize the rate."

QUESTION 10	
TOTAL POINT VALUE: 2	**LEARNING OBJECTIVE: B1-B3**
SAMPLE/ACCEPTED ANSWERS	

Part a: 0.5 point

Porter 12.12-12.13 (10M + 40M + 50M) = 100M

Part b: 0.5 point

Porter 12.15:
- 3B / (5B + 3B + 1.7B) = 30.9%--> 100M * 30.9% = 30.9M, from part a
- 3B / (5B + 3B + 1.7B) = 30.9%--> 200M * 30.9% = 61.8M, surplus given
- 3B / (5B + 3B + 1.7B) = 30.9%--> <Answer from (a)> * 30.9%

Part c: 0.5 point

- Unearned premium <u>may</u> not be fully recouped
- Claim limit
- Claim deductible
- Large net worth deductible
- Means test/restrictions
- Surplus lines don't qualify
- Risk retention groups don't qualify
- May be delay in payments
- Trigger of coverage, coverage only begins after a court declares the insurer insolvent
- Fund may be exhausted because there is a finite limit (2% of written premium) that can be assessed per a year

Part d: 0.5 point

- Critics have questioned whether there will be enough money because of percentage of premium limits following natural disasters, but both industry and NAIC studies have found state funds have generally had sufficient capacity.
- Have generally succeeded, assessments to remaining companies ensure that policy holders receive at least partial payout in the event of liquidation.
- Guarantee funds generally succeed in covering the liabilities they were intended to cover, since it does provide recoveries when insolvencies happen, which they otherwise now be recovered.
- Yes, guarantee funds have generally had the capacity and have been quick to pay for insolvency costs, with limited interruptions in the market.

EXAMINER'S REPORT

Part a

- The candidate was expected to know what items are covered by the fund (UPER, CAT losses, and inland marine), and which were not (ocean marine, pensions)
- Generally candidates did poorly here, common mistakes being
  - Including ocean marine (most common)
  - Including pensions
  - Excluding inland marine
  - Including all items
  - Simply stating the amount of surplus shortfall (question clearly asks for liabilities)
- This question was generally challenging because the candidate was expected to know exactly

	what was eligible to include in the fund.
Part b	

	• The candidate was expected to know to allocate the assessments based on written premium, and to exclude XYZ from the calculation
	• Almost every candidate got full credit on this question. For those that did not, these were common mistakes
	    o Including XYZ in the calculation (most common)
	    o Using earned premium or surplus to allocate
	• Most candidates knew to use the answer in (a) to complete the calculation. Some candidates used surplus and some stated just the percent allocated to company B and mentioned that it would be a percent of whatever the shortfall was after liquidation; we felt these were valid since the question did not provide all of XYZ's financial statements, so they got full credit.
	• If a candidate got (a) wrong, he or she could still get full credit on (b).

Part c	

	• The candidate was expected to know two limitations to the funds, except for LOB covered
	• Most candidates got full credit on this question. For those that did not, these were common mistakes
	    o Claiming UEPR was completely ineligible for recovery (most common)
	    o Stating the insured would not recover the entire amount owed (too vague)
	    o Stating the fund would allow for partial coverage after insolvency (the question asked for the impact on recoveries, not coverage)
	•

Part d	

	• The candidate was expected to know the purpose of the fund, and make an argument on whether its goal had been achieved.
	• This question was a mixed bag for most candidates. The biggest reason for point loss was failure to discuss. These were common mistakes:
	    o Lack of discussion (most common mistake)
	    o Arguing no, simply because often claims would not be paid in full; the point of the fund is not to completely make policy holders whole again
	    o Arguing no because it incentivizes risk taking by insurers (the question asked for success in terms covering liabilities meant to be covered, not the fund's impact on the marketplace)
	Some candidates were a little confused on this question, so we generally gave credit if the candidate took a stance and made a logical argument as to the nature of the fund's success in covering liabilities.

QUESTION 11	
TOTAL POINT VALUE: 2.5	**LEARNING OBJECTIVE: B**
SAMPLE/ACCEPTED ANSWERS	

Part a: 1 point

- State governments would not be writing other lines of insurance like private insurers, therefore they would be more specialized and knowledgeable as opposed to private insurers who may write other lines in addition to WC
- State governments can specialize in WC and offer rehabilitation services and job retraining for injured workers.
- If state government provides WC, they will not have to spend on commissions and marketing and this expense savings can result in lower prices.
- Can give back dividends to insureds, thereby decreasing costs.
- State government does not need to charge for profit contingency since government doesn't need a profit, so cheaper premiums.
- State fund doesn't try to profit, so will be willing to take all comers to ensure mandatory insurance is available to all
- Affordability as profit is not the main goal, rather the social equity.
- Since coverage is compulsory, the government can ensure that all who need coverage can find it since the government cannot refuse coverage.
- Provide convenience and obtain efficiency. With government involvement, the insureds can reduce time and resource to obtain coverage with more convenience and efficiency.

Part b: 1 point

- Private insurers have been shown to provide WC as efficiently as state funds.
- There are also monoline WC private insurers who specialize in WC.
- Private insurers who exclusively write WC insurance may have more experience writing and can operate more efficiently with better claims handling practices.
- More competition and innovation. Competition should cause private insurers to compete with each other to provide best risk classifications and services.
- The competition helps to keep costs lower and more affordable.
- Can have a package policy with other coverages; all insurance is provided with one carrier; convenience and ease of doing business
- Increased incentive for loss control as premiums are more actuarially sound; fewer subsidies exist.
- Private insurers tend to sell policies with fewer (or no) subsidies between classes unless mandated to do so by regulation. More appropriate costs for individuals and better incentives to mitigate losses.

Part c: 0.5 point

- Some states operate exclusive state funds, but the number is relatively few. Most states have a WC operation as either a competitive state fund or insurer of last resort and the majority of the market is made up of private insurers. This is evidence that most states see private insurers as providing WC coverage effectively.
- While only a few states operate exclusive state fund, a number of others operate

competitive state funds. This suggests that private WC insurers are not as effective as states would like.

- About half of states operate state funds, so this would indicate mixed results of private insurers. Private has generally been effective, but states need to offer certain high risk businesses coverage when private does not want to insure. Competing plans also keep costs down by offering increased operating efficiencies by not needing to market.

EXAMINER'S REPORT

Candidates generally performed well on Parts A and B, listing the advantages of state funds and private insurers. Some candidates did not always provide full descriptions.

Part C was a more complex question, as candidates needed to evaluate the effectiveness of private insurers given state fund involvement in the WC marketplace. Many candidates did not provide a logical conclusion based a metric of state fund versus private insurers in the marketplace.

Part a

- The candidate was expected to list two separate advantages and provide a full description of both to obtain full credit.
- Candidates often listed an advantage, but did not provide a full description or fully justify. As an example, candidates often listed lower expenses as an advantage for state funds. A more complete response would be that state funds have lower expenses due to no marketing or commission costs.
- Candidates needed two distinct advantages. Some candidates provided two responses that were related or very similar. Combining the advantages sometimes led to one complete response. As an example, some candidates listed no market costs and no agent commissions as separate advantages. These are both examples of lower expenses, which is one response.
- Some responses implied that all state funds were exclusive, when most state funds are competitive.

Part b

- The candidate was expected to list two separate advantages and provide a full description of both to obtain full credit.
- Candidates often listed an advantage, but did not provide a full description or fully justify. As an example, some candidates simply wrote that private insurers provide better services.
- Candidates needed two distinct advantages. Some candidates provided two responses that were related or very similar. Combining the advantages sometimes lead to one complete response. . As an example, some candidates wrote that private insurers can charge more actuarially sound rates, which limit subsidies and encourage loss control. Actuarially sound rates are one response.
-

Part c

- Candidates were expected to provide a true metric about the relative number or market share of exclusive or competitive state funds versus private insurers. They then needed to make a logical conclusion about the effectiveness of private insurers based on the metric.
- Some candidates described the effectiveness of private insurers based on the advantages that were listed in Part B. They did not tie the effectiveness to the propensity of state

funds.
- Some candidates indicated that there were few state funds. There are few <u>exclusive</u> state funds, but approximately half of the states have some form of state fund.

QUESTION 12	
TOTAL POINT VALUE: 1.75	**LEARNING OBJECTIVE: B1/B3**
SAMPLE/ACCEPTED ANSWERS	

Part a: 0.75 point

- Federal Government
  - Provide funds for losses in excess of set amounts of loss resulting from terror attack
  - Acts as reinsurer to private companies
  - Act as reinsurer to insurer Terrorism losses
  - Reinsurers the high layers of the coverage that provided by the private insurers. Partnership with private market
- State Government
  - Not involved
  - No role
  - Does not have a role other than regulating the insurer as normal.
- Private Insurer
  - Offer and handle claims for terrorism coverage and pay losses up to attachment point
  - Writes TRIA & provides primary coverage
  - Write and maintain policies. Cede some of the loss and premium to federal government
  - Write terrorism coverage. Primary insurer up to certain level.
  - Partnership with the fed gov't. Writes the insurance and cedes to federal gov't the high layers of the coverage it cannot retain.
  - Provide the primary coverage for terror exposed properties, up to point where Federal reinsurances begins.

Part b: 0.5 point

- Fill Unmet Needs
  - Make terrorism coverage available – after the 9-11 terrorist attacks, insurance companies were unwilling to provide the terrorism coverage without the financial backing of the federal gov't
  - Fill unmet need – Private insurers not willing to provide terrorism coverage (CAT nature)
  - Provide availability of coverage that was rapidly disappearing from private market after 9/11
  - Losses from terror (like 9/11) are too large for private insurers to handle alone; they would go insolvent on their own.
- Achieve Collateral Social Purpose
  - Social purpose – Terrorism coverage encourages business continuation after terrorist attack ($\downarrow$business interruption)
  - Social goal of reducing the economic disruption that would occur after a terror attack if businesses were unable to secure terrorism insurance coverage.
  - Provide economic stability in even of act of terrorism
  - Having gov't as reinsurer will prevent large scale market disruptions

Part c: 0.5 point
- Ineffective   - The program has not been very effective. There has been less demand for terrorism coverage than originally thought. It is filling an unmet need, but can do little social good if most businesses don't purchase terrorism insurance.   - It has been somewhat effective in providing the coverage; however, the initial idea was to transfer this to the private market and that government involvement was temporary. The many temporary extensions show this is not the case.   - Few risk exposure since creation, so little utilization → overall serves purpose but not entirely effective at filling a need.   - It's been mildly effective. It's allowed consumers to purchase this coverage as intended but the private market has not started to sell this coverage. The original intent of TRIP was for the government to step away after private market started offering which hasn't happened.   - Program has been marginally successful. The demand was not as great as initially anticipated so many business would still face terrorism costs/possible ruin. However, it has made the coverage available satisfying 1 of the 2 goals in b).   - The program is not very effective. Demand was not as high as anticipated. Private insurers could provide this coverage if it is backed by catastrophe bonds.   - Not very effective. Program was supposed to be temporary yet it is still federally run as insurers do not want to entirely own this risk. Also there is not fully adequate funds.   - Effective   - However, it has been effective in proving coverage for those insurers that want it.   - Program effective in increasing availability of coverage, but it has not been tested by an actual terrorist attack so it may be that this coverage is unnecessary.   - Has been effective, but not really utilized to the extent of the 9/11 losses. So lack of losses have reduced usefulness and there has not been much experience to work with to project potential future costs.   - It has been effective at providing coverage while allowing time for insurers to build models, understand the risk and build capital for events.   - Been effective so far, as high risk concentration areas (Washington DC, LA, NYC) continue to be insured.
EXAMINER'S REPORT
Most candidates got the material's big picture, but missed out some details that prevented them from getting full credit.
Part a
Most papers were missing the part that private companies are required to retain part of the risk. It's not 100% ceded. Occasionally, candidates remarked on the state's role in monitoring filed rates and potential for insolvency. Candidates were only given full credit if they explicitly mentioned that state government has no direct role in TRIA.
Part b
"Unmet need" is the catchy phrase, almost everyone wrote it, and explained that private companies were not willing to provide coverage. When candidate wrote "unmet need" but did not explain why the coverage was unavailable they did not get credit. But only a

	little more than half remembered the preventing market disruption part.
Part c	
	• This was a very open-end question. Most gave the answer low participation as the indication of ineffectiveness. This answer was given full credit only if the candidate expounded upon why low participation rates demonstrate ineffectiveness of the program. Another common response was that it provided the needed coverage, thus is effective. This response was given full credit.

QUESTION 13	
TOTAL POINT VALUE: 2	**LEARNING OBJECTIVE: C1**
SAMPLE/ACCEPTED ANSWERS	

Part a: 1 point

Mean PHS = (8000 + 8400)*.5 = 8200
Intermed calcs:
Total = .5 *(16,400 + 16,700 + 4000 + 4100) + 9100 = 29, 700
Home = .5 *(1000 + 1100 + 4000 + 4100) + 3200 = 6000
PPA = .5 *(2000 + 2000 + 1100 + 1100) + 3200 = 6300
Allocated surplus:
Home = 6000/29700 * 8200 = 1657
PPA = 6300/29700 * 8200 + 1739

Part b: 0.5 point

The following all received full credit:

Effective as a general method but ignores risk inherent to LOBs such as catastrophe exposure to homeowner.

Retrospective measure, does not account for futures changes in the book of business. If change in mix of business or significant growth then not effective

Not effective, because it doesn't consider the amount of risk inherent in the line of business. For example, a long tailed line would have more risk than a short tail line.

Part c: 0.5 point

The following all received full credit:

The difference is how they grouped the LOBs

IEE is countrywide, while stat page 14 shoes state by state information

In IEE expenses are further broken down by acquisition expenses, commission, taxes, and general expenses

There is no investment gain allocated to capital and surplus calculation on stat page 14, but it is included in the IEE

IEE = Net and direct
Page 14 = Direct

EXAMINER'S REPORT

Most candidates got A&B correct and C incorrect.

Part a

Candidate was expected to calculate the surplus allocation to LOB in the IEE.

Most candidates answered mostly correct.

Common errors:
- Used the average NEP rather than the 2012 NEP
- Allocated the full mean PHS to both lines rather than the % needed
- Calculated the amount needed for a single line only

Part b

Candidate was expected to know the problems with the IEE surplus calculation method

Most candidates answered mostly correct.

We accepted a broad range of answers. Weaker responses included the following:
- "Does not take into account the duration of the line of business"
- "Not all surplus is required to support the lines"
- "Allocating surplus is artificial in general"

Part c

Candidate was expected to know about the IEE and the Exhibit of Premium and Losses (stat page 14) and major differences.

This question stumped many candidates

Common errors:
- Confusing page 14 with Sched p
  - CY vs AY
  - How many years are shown in the exhibit
  - LOB vs Aggregate view
- Non answers like saying the IEE is in thousands while page 14 is in full dollars
- Confusion about direct vs gross vs net
- Confusion about LOB grouping
- Did not structure response as a comparison

QUESTION 14	
TOTAL POINT VALUE: 5.00	**LEARNING OBJECTIVE: C1/C2**
SAMPLE/ACCEPTED ANSWERS	

Part a: 2.25 point

- Loss Reserve = Direct and Assumed Reserves (Unpaid Case + Bulk/IBNR) – Ceded Reserves (Unpaid Case + Bulk/IBNR) = (4,400 + 5,300) – (1,000 + 1,050) = 7,650 → Loss Reserve should be 7,650
- LAE Reserve = Direct and Assumed Reserves (DCC case + Bulk/IBNR + AO) – Ceded Reserves (DCC case + Bulk/IBNR + AO) = (500 + 1,100 + 500) – (60 + 120 + 1) = 1,919 → LAE Reserve should be 1,919
- Unearned Premium Reserve = 2,050 + 50 = 2,100 → UEPR should be 2,100

Part b: 1.75 point

- Admitted Assets = Cash and invested assets + Accrued retrospective premium + Amounts recoverable from reinsurers + Deferred premiums, agents' balances + Uncollected premium and agents' balances = 13,385 + 100 + 200 + 250 + 550 = 14,485
- Liabilities = Loss Reserve + LAE Reserve + UEPR + Ceded reinsurance premiums payable + Reinsurance payable on paid losses = 7,650 + 1,919 + 2,100 + 30 + 1,500 = 13,199
- Surplus = Admitted Assets – Liabilities = 1,286

Part c: 1 point

- Net Written Premium (NWP) = 1,450 + 3,500 + 100 – 1,375 – 25 = 3,650
- IRIS Ratio #2 = NWP / PHS = 3,650 / 1,286 = 284% which is less than 300% (not unusual)
- While the ratio is in range, the regulator should note that the ratio is close to the unusual value threshold of 300%

EXAMINER'S REPORT

- Very few candidates got full credit for this problem, although most candidates got significant partial credit in each of the three parts
  - Deductions were chiefly due to the inability to correct the misstated UEPR in part a), incorrectly identifying assets or liabilities in part b) and/or failing to discuss the regulators response to the calculated IRIS Ratio in part c)
- The only part of the question that included the synthesis of concepts or papers was part c) where candidates were asked to discuss the regulator's response to the calculated IRIS ratio. In this case, a synthesis of several concepts or papers could have been applied and a wide variety of supported responses were given full credit.

Part a

- Candidates had to identify and correct the misstated Loss, LAE and unearned premium reserves to receive full credit for this part.
- Candidates generally performed well in identifying and correcting the Loss and LAE Reserve. While many candidates could identify the UEPR as being incorrectly stated on the Statutory Balance Sheet, the most common error on part a) was to incorrectly calculate the UEPR. Many candidates incorrectly included Earned but Unbilled Premium and/or the Reserve for Rate Credits and Retrospective Adjustments Based on Experience in the calculation for UEPR (either through addition or subtraction).
  - A smaller number of candidates incorrectly identified other items, notably the accrued retrospective premium, as being incorrectly stated on the Statutory Balance Sheet

	o A small number of candidates did not include AO reserves when calculating the corrected LAE Reserves
Part b	

	• While many candidates received partial credit on this part, a majority were not able to correctly identify all correct components of the assets and liabilities. Candidates had to correctly calculate the asset, liability and surplus to receive full credit for this part.
	 • Common errors included:
	     o Including liabilities as assets or assets as liabilities
	     o Altogether leaving off balance sheet items listed on the Statutory Balance Sheet (with the exception of non-admitted assets) or including amounts from the Underwriting and Investment Exhibit
	     o Failing to bring down corrected responses from part a) to part b)
	     o Because the problem was not specific, supportable treatments of non-admitted assets were accepted. However, some candidates included non-admitted assets in the asset total but did not remove them when calculating the surplus and therefore did not receive full credit.

Part c	

	• Candidates were expected to correctly calculate the net written premium, calculate the IRIS Ratio, compare it to the threshold value of 300% (or at least clearly state a pass/fail for the test), and discuss how the regulator would respond to the calculated IRIS ratio to receive full credit for this part.
	 • The most common error for part c) was to fail to provide a regulator response. A variety of supported answers were accepted here. Candidates that addressed potential insurer responses (such as "increase surplus") were not awarded credit.
	     o Many candidates calculated IRIS Ratio #2 as being above 300% due to the surplus they calculated in part b). In these instances, credit was awarded to candidates that provided a reasonable possible response from the regulator given that IRIS Ratio #2 had an unusual value. Some accepted possible responses included:
	        ▪ Look at GWP / PHS or examine IRIS Ratio #2 for the group due to the high level of affiliate business
	        ▪ Look at the mix of long and short tail business (short tail can sustain higher ratios)
	        ▪ Look at profitability of company (more profitability can sustain higher ratios)
	        ▪ Look at financial strength of reinsurers and/or examine the adequacy of the reinsurance program

QUESTION 15	
TOTAL POINT VALUE: 2.5	**LEARNING OBJECTIVE: C1**
SAMPLE/ACCEPTED ANSWERS	

Part a: 1.5 points

- Was there a catastrophe that led to a large amount of recoverable?
  - Motivation: Want to see whether the large amount of recoverable is temporary/permanent or usual/unusual issue.
- Why wasn't security provided?
  - Concern that Y may not be able to pay the recoverable.
- Are there concerns of the financial health of these reinsurers?
  - Concern that Y has a low AM Best rating.
  - Concern that X has been late in its payments.
- Do the reinsurers have high capital to insurance in force?
  - Higher capital would have less chance to default.
- Has X been current in their recovery payments?
  - It may create cash flow issues when Reinsurer X doesn't pay claims right away.
- Are X and Y affiliated (with each other)?
  - Recoverable amount is the same; might be increased credit risk if these two reinsurers are affiliated.
- Are any of these reinsurers affiliated with the insurer?
  - Disputes may be less likely, increasing chance of recovery.
- Double-check the numbers – is there a transcription error?
  - The recoverable amounts for X and Y are the same, and this looks suspicious.
- Have any of these reinsurers recently experienced ratings downgrades?
  - Might be indicative of financial trouble?
- Why are you doing business with low-rated and/or slow-to-pay reinsurers?
  - To gain a better understanding of why the insurer is comfortable with what would ordinarily be increased credit risk.
- What is the materiality standard used for notes B or D?
  - Amounts not material to the insurer's management may be material to the actuary.
- Has there been a history of disputes or payment delays? Or, more generally, what has the past working relationship between the insurer and reinsurers been like?
  - Past experience may be predictive of future recoverability problems.
- Is any of this reinsurance through an involuntary pool or association?
  - Especially with respect to X, pools or associations might pay late due to reimbursement schedules although collectability risk is negligible.
- Is the company relying too much on reinsurance? What are the ceding commissions involved with these contracts?
  - Concern that the company is using these reinsurers for surplus relief, artificially inflating surplus at the cost of assuming additional credit risk.
- What is management's opinion of future uncollectibility?
  - Management's insight in this area is important. Note 23 is retrospective, while management's insight is prospective.
- Might any of the arrangements qualify as financial reinsurance?

o   This needs to be disclosed.

Part b: 1 point

- To what degree will retrocessions between these reinsurers or to another reinsurer expose them to systemic credit risk?
    - o   Reinsurers could be exposed to systemic credit risk and may not have enough resources to pay claims.
    - o   Risk could be decreased if the reinsurer has a well-designed reinsurance program with well-capitalized counterparties.
- Would high concentration of recoveries from X/Y be an issue?
    - o   X is slow to pay; Y has a low rating.
- What are the terms of the contracts with these reinsurers?
    - o   Limits, layers, reinstatement premiums, coverage triggers, facultative/treaty and so on all have a bearing on how much liability the insurer will ultimately bear for the catastrophe.
- To what extent was the catastrophe reflected in the financial statement?
    - o   Would like to know the total recoverables, including the catastrophe's impact on surplus.
- Is there information that can tell to what degree Reinsurer Y is exposed to the winter cat?
    - o   Want to know whether Reinsurer Y is exposed to it through multiple channels (i.e., does it reinsurer other insurers that were impacted by this catastrophe).
- Additionally: any answer that was acceptable for A which would also be appropriate to ask in light of this catastrophe.

EXAMINER'S REPORT

For both parts of this question, the candidate was expected to develop questions (and associated motivations) whose answers, which could not be found in the information given, could reasonably be expected to be relevant to the work of the Appointed Actuary. For the second part of this question, candidate responses were expected to relate to the reinsurance for the catastrophe described in the prompt.

Part a

This portion of the question was challenging, and candidates generally had difficulty on this part. Many candidates responded with less than the three requested questions.
Other common errors:

- Many candidates confused the role of the Appointed Actuary and the company actuary, with large number of responses related to the provision for reinsurance and the calculation thereof (including questions about whether the reinsurer was slow paying and/or authorized). The mechanics of the calculation of the provision for reinsurance is ordinarily not a concern of the Appointed Actuary.
- Many candidates responded with questions without providing an associated motivation.

	• Many candidates provided motivations that were substantially identical to their associated questions (e.g., "Why does Reinsurer Y have such a low rating? Want to know why low rated.") • Many candidates responded with questions that could be answered from the information provided in the prompt (e.g., "What is the rating of Reinsurer Y?" or "What lines of business does the primary insurance company write?").
Part b	
	Candidates had more success on this portion of the question, with candidates generally scoring very well. Almost all candidates were able to respond with two questions. In addition to the common errors listed for the first portion of this question, some candidates lost points because they supplied answers for the second portion of this question which were not related to the reinsurance for the catastrophe described in the prompt.

QUESTION 16	
TOTAL POINT VALUE: 4.5	**LEARNING OBJECTIVE: C1**
SAMPLE/ACCEPTED ANSWERS	

Part a: 1.5 points

Example 1:

2D

AY	2010	2011	2012
2010	0	157,500	175,000

3D

AY	2010	2011	2012
2010	0	0	70,000

Example 2

All Entries in the AY 2010 row

For Part 2D:

For CY 2011 column: 900k x (25% x 70%) = $157k

For CY 2012 column: (900k + 100k) x (25% x 70%) = $175k

For Part 3D:

For CY 2012 column: 400K x (25% x 70%) = $70k

Example 3:

Retroactive reinsurance has not effect to Sch P

Pooling rate should be adjusted according to latest rate

2D

AY	2010	2011	2012
2010	0	157,500	175,000
		(900 x .7 x .25)	(1000 x .25 x .7)

3D

AY	2010	2011	2012
2010	0	0	70,000
			(400 x .25 x .7)

Part b: 1.75 points

Example 1:

Reinsurer	Rein. Recov. On Paid Loss	Rein. Recov. On Case Loss
Insurer BB	210,000	315,000
Reinsurer CC	120,000	180,000

Example 2:

From Reinsurer CC

Reinsurance Recoverable on Paid = 400,000 x 30% = 120,000

From Reinsurer BB

Reinsurance Recoverable on Paid = 400,000 x (1-30%) x 75% = 210,000

From Reinsurer CC

Reinsurance Recoverable on Unpaid = (900,000 + 100,000 – 400,000) x 30% = 180,000

From Reinsurer BB

Reinsurance Recoverable on Unpaid = (900,000 + 100,000 – 400,000) x (1-30%) x 75% = 315,000

Part c: 0.5 point

Listing two or more of the following with no other incorrect statements:
- Consideration paid reduces cash asset
- Loss reserves unaffected
- Total liability reduced
- Write-in contra-liability on balance sheet
- Difference recorded as special surplus
- In order to move to unrestricted surplus, the recoveries must be greater than the consideration paid
- Retroactive reinsurance must use deposit accounting

Part d: 0.75 point

Listing three of the following:
- Income Statement/Capital & Surplus Accounts
- Notes to the Financial Statement/Notes to the Annual Statement
- Underwriting and Investment Exhibit (U&IE)/Underwriting & Investment Expense Exhibit
- Schedule T
- Exhibit of Premiums and Losses/Statutory Page 14/Page 14
- 5 Year Historical Data/5 year exhibits
- Statement of Cash Flows

EXAMINER'S REPORT

The candidate was expected to know a number of different annual statement exhibits, treatment of retroactive reinsurance, quoted share reinsurance, and pooling percentage changes.

Candidates had difficulty with this question. There were a few challenging concepts, including retroactive reinsurance and pooling percentage changes. There were also a number of places to lose partial credit. Overall, candidates struggled with subpart B (schedule F) which was expected given some of the nuances of the exhibit. Candidates were pretty split and either got most of the points or very few of the points on that subpart (not many in between.) Candidates did great on subpart c.

Part a

The candidate was expected to know the setup of Schedule P Parts 2D and 3D. This included showing calculations for the inputs of the incurred and paid triangles, showing it was net of reinsurance and pooling arrangements, but not impacted by retroactive reinsurance. Also, the

candidate was expected to correctly reflect the most recent pooling percentage change.

Common Mistakes:
- Not showing the CY 2011 calculation in part 2D
- Not using the correct ceding or pooling percentages (particularly for the CY 2011 calculation)
- Including retrospective reinsurance recoveries in the triangle
- Calculating incremental incurred (part 2D should be cumulative occurred)
- Showing the wrong accident year
- Showing a calculation for CY 2010 (as there was no incurred loss in 2010).
- Math mistakes

Part b

The candidate was expected to know the setup of Schedule F Part 3 – Ceded Reinsurance and how retroactive reinsurance did not impact it. This included showing calculations for the paid and unpaid reinsurance recoveries of the two different reinsurers separately. Also, the candidate was expected to correctly reflect the most recent pooling percentage change.

There was a lot happening in this question, and a lot of little errors that candidates could make.
Common Mistakes:
- Showing calculation for multiple years instead of the latest year only.
- Not listing the recoveries separately for BB and CC, or only showing one of the reinsurers not both.
- Including recoveries from DD, the retroactive reinsurer, which should not be included.
- Showing paid and incurred recoveries instead of paid and unpaid.
- Confusing part 3 with the aging schedule and bucketing recoveries by how overdue they were.
- Not showing enough work to get partial credit. For example, if the candidate only listed their final answer without showing any work/formulas to support their answer and the answer provided did not match the sample answer, there was not a way to determine the candidate knew what they were doing so partial credit was minimal.
- Using the incorrect ceding percentage or pooling percentage in their calculations.
- Forgetting to pick up the adverse development in their unpaid recoveries calculation.

Part c

Candidate was expected to know the accounting treatment of retroactive reinsurance in the balance sheet. The candidate needed to show they knew the unique aspects of retroactive reinsurance accounting versus traditional insurance/reinsurance accounting.

Most candidates received full credit. Common errors included mixing up treatment or not actually stating the effect on the balance sheet (increase in surplus, decrease in liability, decrease in assets, etc.) Some candidates listed impacts for other exhibits instead of balance sheet (impact on income statement or schedule P or schedule F.) Please note, if the candidate did this, but also showed they know the effect on the balance sheet, they could still receive full credit. A few candidates stated loss reserves were reduced or cash was increased by reinsurance recoverable or surplus was moved to unassigned when consideration was less than recoveries which are all

incorrect.
Part d
The candidate was expected to list three additional places in the annual statement impacted by incurred loss and/or retroactive reinsurance (see list of sample accepted answers above.)

Based on the context of the question (which gave three examples of exhibits and asked for three more) we expected the candidate to list three different exhibits or places in the annual statement. Quite a few candidates listed multiple section/components of the same exhibit. In this case, the candidate only received credit for one response. A few candidates listed one of the given exhibits (for example listing a part of the balance sheet when balance sheet was in the question itself.)

The question asked other places in the annual statement, so we accepted only exhibits in the annual statement itself and did not accept answers from the annual statement supplements (for example Statement of Actuarial Opinion, Insurance Expense Exhibit, or Actuarial Opinion Summary.) The supplements are separately referenced in the syllabus, filed at different times and may be confidential. |

QUESTION 17		
TOTAL POINT VALUE: 4		**LEARNING OBJECTIVE: C1**
SAMPLE/ACCEPTED ANSWERS		
Part a: 2.5 points		

Average Paid Severity Per Closed Claim – Both cumulative paid losses per closed claim and cumulative paid losses per claim closed with payment received full credit

1) Part 3 Net Paid Losses / Part 5 Claims Closed with Payment

	2009	2010	2011	2012
2009	3,750	4,417	5,200	5,500
2010		**3,813**	**4,739**	**5,360**
2011			**4,200**	**5,091**
2012				**5,253**

Sample Calculation: 5,253 = 788,000 / 150

2) Part 3 Net Paid Losses / (Part 5 Reported Claims – Part 5 Outstanding Claims)

	2009	2010	2011	2012
2009	3,750	4,417	5,200	5,500
2010		**2,905**	**3,633**	**4,188**
2011			**3,150**	**4,000**
2012				**4,147**

Sample Calculation: 4,147 = 788,000 / (280 – 90)

Average Outstanding Case Reserves

1) Net Outstanding Case Reserve (Part 2 – Part 3 – Part 4) / Part 5 Outstanding Claims

	2009	2010	2011	2012
2009	5,500	10,333	18,000	20,000
2010		**5,330**	**10,333**	**18,000**
2011			**4,889**	**10,333**
2012				**4,744**

Sample Calculation: 4,744 = (1,630,000 – 788,000 – 415,000) / 90

Part b: 0.5 point
Prior Year Development = Incurred Net Losses & DCC Reported at Year End 2012 – Incurred Net Losses & DCC Reported at Year End 2011 2010: 1590 – 1590 = 0; 2011: 1640 – 1550 = 90
Part c: 1 point
Below are examples of the correct items that were identified along with sample questions that candidates could ask for each item. • Average Outstanding Case Reserve is decreasing at 12 months maturity – Are reserves adequate at 12 months? Are case reserves weakening? • Average Paid Severities are increasing at 12 months maturity – Are claims being paid faster? Has loss experience worsened? Are there changes in environment: mix of business, legal, etc. • Average Outstanding Case Reserves are decreasing at 12 months while average paid severities are increasing – Has there been a change in claims handling practices? Are larger claims being handled differently? • Adverse 1 year development in AY 2010 and/or 2011 from 12 to 24 month – What caused the change? Are reserves for 2012 adequate at 12 months? • Average case outstanding is the same at 24 and 36 months for AY 2009-2011 – Are reserves being set by formula? Do the reserve amounts incorporate inflation? Are reserve amounts appropriate? • Average paid severity decreased from AY 2009 to 2010, but has increased ever since – What changed in 2010 to cause this? (applicable if candidate used total closed claims in part a)
EXAMINER'S REPORT
Part a
• The candidate was expected to retrieve the correct values from the appropriate triangles and perform the calculations necessary to complete the average paid severity and average case outstanding triangles. • The candidate should have filled in the two triangles and provided a sample calculation for each. (Full credit was given even if a sample calculation was omitted) • For the average paid severity triangle, the most common errors were using incremental paid losses, incremental closed claims, or a combination of the two. For the average case outstanding triangle, the most common errors were not subtracting IBNR: using (Incurred Losses – Paid Losses)/Outstanding Claims, not subtracting paid losses: using (Incurred Losses – IBNR)/Outstanding Claims, or using IBNR/Outstanding Claims
Part b
• The candidate was expected to know what numbers needed to be used to calculate prior year development and to subtract those numbers. • To receive full credit the candidate needed to calculate the total prior year development for AYs 2010 and 2011 and provide sample calculations • Common errors included calculating the 2 year development for 2010 or providing a development factor instead of subtracting the year end losses • Full credit was given if 2 year development was given in addition to 1 year development

Part c
- The candidate was expected to use their answers from parts a and b and ask questions that may be of concern to an appointed actuary   - To receive full credit, the candidate needed to provide 2 questions that an actuary would want to know the answers to given the results from parts a and b. They also needed to provide rationale for why the actuary would want to know the answer to those questions based on what they'd seen in parts a and b   - The most common error was that candidates asked an appropriate question, but did not provide any context to describe why they asked it. These candidates received credit for identifying a question but did not receive credit for briefly describing the rationale.   - Additional common errors included assuming that average case outstanding increasing over time was an issue or providing general questions unrelated to part a and part b. The question stated "Using the results from parts a. and b. above,…". However, these candidates provided answers without tying them to the data. Examples are "mix of business" or "changes in legal environments".

QUESTION 18	

TOTAL POINT VALUE: 6	- **LEARNING OBJECTIVE:**
	- Syllabus Section C2
	   o LO: Using RBC Formulas and IRIS ratios, evaluate an insurer's financial health
	     ▪ KS A: RBC formula
	     ▪ KS B: Components of RBC
	- Syllabus Section C4
	   o LO: Calculate specific elements of income tax and evaluate their implications for a property/casualty insurer
	     ▪ KS A: Discounting
	     ▪ KS B: Elements of income tax calculation
	     ▪ KS C: Statutory book income vs. taxable income
	     ▪ Alternative minimum
	     ▪ Deferred Tax Asset and Deferred Tax Liability
	     ▪ Temporary vs. permanent differences

SAMPLE/ACCEPTED ANSWERS

Part a: 2.25 points

Sample #1

$EP = WP - \Delta UEPR$				
$490 = 500 - \Delta UEPR$				
$\Delta UEPR = 10$				
		X = Investment in muni bond		
RTI =	Stat U/W Income =	5		
	+ .2 $\Delta UEPR$ =	10(.2)		
	+ Reserve Disc =	10		
muni ->	+ X * .04 =	.04X * .15		
corp ->	+ (1500 - X)(.09) =	(1500 - X)(.09)		
	= 17 +.006X + 135 - .09X			
	=152 - .084X			
AMTI =	152 - .084X + .75(.85 (X) (.04))			
	=152 - .084X + .0255X			
	=152 - .0585X			
.35 (152 - .084X) = .3 (152 - .0585X)				
53.2 - .0294X = 45.6 - .01755X				
7.6 = .01185X				
muni -> X = 641.35				
corp -> 858.65 = 1500 - 641.35				

Sample #2

	.3(AMTI) = .35 (RTI)		Assume x = % muni			
	AMTI = 1.167 (RTI)		1-x = % corp			
		SAP UW Inc	proration provision for tax exempt			
RTI =	5 + .2 ΔUEPR + chng discount + .15(.04)(x)(1500) + .09(1-x)(1500)					
				corp bonds (not tax exempt)		
	= 5 + .2(500-490) + 10 + 9x + 135 - 135x					
RTI =	152 - 126x					
AMTI =	RTI + .75(amount exempt from tax)					
	= 152 - 126x + .75 (.85(.04)(x)(1500)) = 152 - 126x + 38.25x - 87.75x					
Max net income =>	.3 (152 - 87.75x) = .35(152 - 126x)					
	45.6 - 26.325x = 53.2-44.1x					
	17.775x = 7.6					
	x = .4275					
	*1500 ---> 641.35M to muni bonds					
		858.65 ---> corporate				

Sample #3

Say insurer invests (X) amounts in muni bond			
Investment in corporate bond = (1500 - X)			
RTI = 5 + .2 (500 - 490) + (1500 - X)(.09) + (X)(.04)(.15) + 10			
= 17 + 135 - .09X + .006X			
=152 - .084X			
AMTI = 152 - .084X + .75(.85 * .04(X))			
= 152 - .084X + .0255X			
=152 - .0585X			
To optimize tax: (.30) AMTI = .35 (RTI)			
.3 (152 - .0585X) = .35 (152 - .084X)			
45.6 - .01755X = 53.2 - .0294X			
Allocated to municipal (X) = 6441.35M #			

Part b: 3.25 points

Sample #1

muni bonds charge 641.35 * .02 = 12.827					
corp bonds charge (1500 - 641.35) * .10 = 85.865					
R1 = 12.827 + 85.865 = 98.692					
R0 = 50					
R2 = 50 * .15 = 7.5					
R3 = .1 * (15-1.5) = 1.35 * 1/2 = .675					
R4 = 100 + 1/2* (.1 * (15 - 1.5)) = 100.675					
R5 = 130					
2012 RBC requirement = $50 + (98.692^2 + 7.5^2 + .675^2 + 100.675^2 + 130^2)^{1/2}$ = 241.917					
RBC ratio (using 30% AMTI tax rate) = (235 - 2)/(241.917 * .5) = 193% < 200%					
Using 20% tax rate, RBC ratio is 211% > 200%, there is no action level.					
Using 30% tax rate, RBC ratio drops to 193%, which is company action level.					
Company needs to submit a plan to regulator about how to increase surplus					
or reduce risk; no action from regulators.					

Sample #2

R1 = 2% * (641.35) + 10% (1500 - 641.35) = 98.692				RBC = $R0 + (R1^2 + R2^2 + ...)^{1/2}$ = 241.92			
R2 = 15% * 50 = 7.50							
R3 = (15 - 1.5) * 10% = 1.35 --> ÷ 2 = .675				adj PHS = 235 - 2 = 233			
rsv > reins recov --> split							
R4 = 100 + 0.675 = 100.675				RBC ratio = 233/(241.92/2) = **192.6%**			
RBC ratio falls into "company action level range" (150-200%) so company must submit a plan							
on how it will increase surplus or reduce risk							

Part c: 0.5 point

Sample #1
Maximize tax advantage but add stipulation to keep RBC > 200% by incorporating RBC charge in calculation.

Sample #2
Use a bond portfolio that will maximize your net income while maintaining RBC % levels above 200%.

Sample #3
Allocate for maximum net income, but stay above 200% RBC ratio.

Sample #4
Optimal allocation is one that makes AMIT = RIT, but also want to optimize so don't get RBC ratio
below 200%. So need to use latter as constraint.

EXAMINER'S REPORT

Part a

The question required the candidate to calculate the RIT and AMIT at the new 2012 AMIT rate. Further
the question required the candidate to know that in order to determine the optimal bond allocation
they should set AMIT = RIT.

Full credit was given for
~calculating all of the components of RTI and assembling correctly
~applying the appropriate RIT rate
~determining the AMIT calculation
~applying the new 30% AMIT rate
~setting these two tax amounts equal

Most candidates were able to demonstrate that they knew AMIT must equal RIT in order to optimize
bond allocation, i.e. maximize net income/minimize tax

Common mistakes:
- Candidates included common stock in investment income. Common stocks are not taxable, only
  their dividends are. The problem specifically notes that the stock was not dividend bearing in
  RTI.
- Candidates neglected to include or miscalculated the change in unearned premium reserve
- Candidates incorporated only the bond without including the remaining components of taxable
  income.
- When setting up their RTI formula candidates subtracted the pro-rated portion of bond income
  without first including the full amount of bond income.
- In RTI, candidates subtracted change in loss reserve discount instead of adding.
- Candidates used the prior AMIT rate of 20%.

Part b

Incorporating the bond allocation from Subpart A, candidates were required to calculate the various
components of RBC charge and ultimately calculate the RBC ratio for the company after the revised
AMIT tax rate. Candidates then needed to identify the RBC Action Level and explain what action was
required.

Most candidates were able to demonstrate knowledge of the RBC charge square root formula and the
RBC ratio formula.

Common mistakes:
- For R3, it was necessary to adjust for the provision of reinsurance. Some candidates did not
  adjust or adjusted incorrectly.
- Candidates set up the RBC charge correctly, but used the incorrect RBC charge rate in various
  components.
- To determine the RBC ratio candidates needed to adjust the Policyholder Surplus by subtracting

the non-tabular discount. Some candidates either missed the adjustment or added the discount.
- Most candidates received credit when they identified the RBC action level and required action. Generally points were lost when candidates omitted this part of the question or just made some comments about the change over the prior calculated ratio from within the question.

Part c

Full credit was given to candidates who indicated that the company needed to incorporate the optimal bond allocation determined in Subpart A (maximizing net income/minimizing taxes) while incorporating the criteria that the RBC ratio should not fall below the Company Action Level of 200%.

Partial credit was given to candidates who identified either maximizing net income/reducing taxes OR reducing RBC charge/increasing RBC ratio, but not both.

QUESTION 19	
TOTAL POINT VALUE: 4.25	**LEARNING OBJECTIVE: C2**
SAMPLE/ACCEPTED ANSWERS	

Part a: 1.5 points

Ceding Commissions = Ceding Commissions + Contingent 31.9+3.4 = <u>35.3M</u>

Estimated reinsurance commission rate

=Ceding commissions from reinsurance, including contingent commissions / Total written premiums ceded to reinsurers (affiliates and non-affiliates)

= (31.9 + 3.4)/131.4 = <u>26.9%</u>

Unearned Premium = all authorized & unauthorized for non-affiliates

= 23.1 + 1.6 + 3.4 + 1.3 + 5.3 + 1.6 + 12.2 + 5.9 = <u>54.4M</u>

Surplus Aid = Estimated reinsurance commission rate x unearned premium on reinsurance ceded to non-affiliates

= 0.269 x 54.4M = <u>14.6M</u>

IRIS ratio 4 = Surplus Aid / Policyholders' Surplus

= 14.6M / 77.1M

= 19.0%

The purpose of IRIS ratio 4 is intended <u>to identify companies that rely heavily on reinsurance as means to enhance surplus</u>.

Part b: 0.5 point

- Unusual values could be caused by:
  - Decrease to PHS (not an acceptable answer for this question)
  - Increase to Surplus Aid caused by <u>increase in unearned premiums on reinsurance ceded to non-affiliates</u>
  - Increase to Surplus Aid through a <u>greater use of reinsurance</u> as part of company strategy for growth or mix of business related to exposure or geography
  - Increase to Surplus Aid caused by <u>increase in reinsurance commission rates</u>
- For this specific company:
  - A relatively new company (6 years) may be <u>increasing their writing potential by utilizing larger amounts of reinsurance</u> as a means of risk transfer
  - Property insurers utilize reinsurance when <u>business is in more catastrophe prone areas</u> (would require assumption on mix of business and/or geographical considerations)
  - Large <u>WC</u> accounts may have <u>catastrophic or excess exposure</u> that could cause cash flow issues to a newer company
  - <u>Reinsurance commissions are slightly up over 2011</u> (26.9% vs. 25.2%)

Other Answers:
- The Company's ceded written premium grew significantly from 2011 to 2012

versus its net. May be entering a new line of business and seeking reinsurance to cover the losses until it is comfortable with the expected loss activity.

- If insurer is growing rapidly to meet obligation it will show unusual value in ratio 4. Relying heavily on reinsurance to create surplus aid creates an unusual value.
- The write HO which is a CAT prone line of business. They may require extra reinsurance, thus receives more than usual commissions.
- Ratios 11-13 show deterioration year over year. Ratio 13 is unusual (>25%). This may indicate adverse development of reserves and the need for surplus relief.
- There was a large shift in premiums from 2010-2011 and a resulting shift in IRIS 11-13 indicating a change in focus or LOB. Insurer may have shifted to a LOB with more of a need for reinsurance.
- The Company ceded significantly more in the last year & may have a valid reason for this such as entering a new market, entering a new LOB, increasing capacity, etc. So they may leverage higher use if reinsurance until they better understand/can more comfortably manage the business.
- They are exposed to lower frequency-higher severity lines in workers comp, property, and GL so they need extra reinsurance to protect against catastrophe or large claims.

Part c: 2.25 points

- Gross Premiums Written to Policyholders' Surplus (ratio 1)
- Net Premiums Written to Policyholders' Surplus (ratio 2)
- Gross Change in Policyholders' Surplus (ratio 7)
- Gross Agents' Balances (in collection) to Policyholders' Surplus (ratio 10)
- Estimated Current Deficiency to Policyholders' Surplus (ratio 13)

Adjustment: When IRIS ratio #4 exceeds the usual range of 15%, the selected IRIS ratios should be recalculated with policyholders' surplus adjusted to remove surplus aid. [Source: NAIC p.13]

Any of the following five, with the exception of IRIS ratio 10, are acceptable:
- Gross Premiums Written to Policyholders' Surplus (ratio 1)
    i.   = (611.7 + 39.0) / 77.1= **844.0%**
    ii. = (611.7 + 39.0) / (77.1 − 14.6) = **1041.4%** [Adjusted ex Surplus Aid]
         1.   Alt Calculation: 844.0% / (1 − 0.19) = 1041.4%
- Net Premiums Written to Policyholders' Surplus (ratio 2)
    i.   = (611.7 + 39.0 − 131.4) / 77.1 = **673.5%**
    ii. = (611.7 + 39.0 - 131.4) / (77.1 − 14.6) = **831.1%** [Adjusted ex Surplus Aid]
         1.   Alt Calculation: 673.5% / (1 − 0.19) = 831.1%
- Gross Change in Policyholders' Surplus (ratio 7)
    i.   = (77.1 − 67.5) /67.5 = **14.2%**
    ii. = [(77.1 − 14.6) −(67.5 − 8.7)] / (67.5 − 8.7) = **6.3%** [Adjusted ex Surplus Aid]
- Gross Agents' Balances (in collection) to Policyholders' Surplus (ratio 10)

i. Cannot calculate without Gross Agents' Balances in Collections
- Estimated Current Deficiency to Policyholders' Surplus (ratio 13)
    i. Given as **27.4%**
    ii. Adjusted = 27.4% / (1-19.0%) = **33.8%**
        1. Alt Calculation: 27.4% / (1 – 0.19) = 33.8%

EXAMINER'S REPORT

Part a

- Candidate was expected to calculate IRIS Ratio 4 and understand the purpose/importance of the ratio.
- This is question requires memorization & recall. Candidates generally scored well with minor mathematical errors.
- To obtain full credit, the candidate should have:
    o shown enough work to demonstrate knowledge of the calculation. For example: Surplus Aid = Ceding Commissions/Ceded WP x UEPR
    o performed mathematical calculation correctly
    o included the purpose of IRIS Ratio 4
- Common Errors
    o Mathematical errors or misuse of the information provided
    o Most common error - Did not calculate UEPR correctly
    o Did not calculate the ceding commission correctly (used UEPR as denominator rather than Written Premium or not including the contingent commission in the numerator)
    o Did not include the purpose of IRIS Ratio 4

Part b

- This question is an interpretation of IRIS 4 and the company-specific information provided in the stem
- To obtain full credit, the candidate should have:
    o Demonstrated knowledge of the causes of increased surplus aid, and
    o Utilized the information in the question to provide specific possible causes for <u>this company</u>
        ▪ Types of business written
        ▪ Exposure to catastrophe or excess losses
        ▪ Growth of company
        ▪ New company (in business for 6 years)
        ▪ Deterioration of IRIS ratios 11-13
        ▪ Increased use of reinsurance and increase in reinsurance commissions relative to prior years
- Multiple answers were acceptable for full credit
- Partial credit was given for:
    o High or increased commissions
    o Use of Pools
- Common Errors
    o Candidates provided generalized answers that did not relate to the Company. Examples of generalized answers that received less than full credit and did not relate

	reasons back to the company: "Relying too heavily on reinsurance to improve ratios" "Ceding commission is too high" "Catastrophic Loss" " Through reinsurance to get surplus relief" - Candidates did not utilize the historical information provided to identify financial trends - Vague answers including: "commissions" "manipulate surplus" "too much reinsurance"
Part c	
	- Candidate needs to identify other "Surplus Ratios" (3 of 5 possible) & compute the ratios with and without the surplus aid - This is question requires memorization & recall. Candidates generally performed well with minor mathematical errors. - To obtain full credit, the candidate should have: - List 3 impacted ratios - Calculate the ratios including the surplus aid (using Part A) - Calculate the ratios excluding the surplus aid (using Part A) - Common Errors - Stating IRIS ratios 11 or 12 which utilize surplus values from prior years, so are not consistent with the current surplus aid - IRIS ratio 7 – the adjusted value required the calculation of the prior year's surplus aid to make the appropriate adjustment to the surplus value - Misapplication of the IRIS ratios (i.e. not including assumed premium in IRIS ratio 1) - Mathematical errors or misuse of the information provided - Candidates can receive credit despite miscalculating Part A – calculations were evaluated using candidate's answers (or assumed IRIS ratio 4 values) to validate understanding of the IRIS ratio adjustment

QUESTION 20	
TOTAL POINT VALUE: 5.25	**LEARNING OBJECTIVE: C.2**
SAMPLE/ACCEPTED ANSWERS	

Part a: 1.75 points

- Credit $R_3 = 21{,}000(.1) + 750(.01) + 900(.05) + 250(.05) + 20(.01) = 2166$
  Adjustment for Reins $= (1/2)(21000)(.1) = 1050$
  Final $R_3 = 2166 - 1050 = 1116$

- $(1/2)(21000)(.1) + (750)(.01) + (900)(.05) + (250)(.05) + (20)(.05) = 1116$

Part b: 2.25 points

$R_0 = 25000$
$R_1 = 10 + 40000 = 40010$
$R_2 = 20000 + 10000 = 30000$
$R_3 = 1116$
$R_4 = 21000 * .1 * .5 + 400000 + 75000 = 1050 + 400000 + 75000 = 476050$
$R_5 = 300000 + 25000 = 325000$

$25000 + (40010^2 + 30000^2 + 1116^2 + 476050^2 + 325000^2)^{0.5} = 603576$

Part c: 1.25 points

- $(525000 - 30000)/(603576 * .5) = 164\%$ → Company Action Level
  No Action from regulators required.
  Company must submit plan to state on how they will reduce risks and/or increase capital.
- $(525000 - 30000)/(603576 * .5) = 1.64$
  Company is at the company level of action so must submit plan to increase surplus and limit liabilities. Regulator doesn't need to take any action.
- $495{,}000/(454{,}484.45 * .5) = 217.8\%$
  (Grader's Note: 454,484.45 was the calculated RBC requirement from part b)
  There is no action level because ratio is > 200%. However, if the company's combined ratio is > 120% then they would be in the company action level which then No action is required by the regulator and company has to submit an action plan how to raise capital/reduce risk.
- Ratio = (surplus – nontab discount)/RBC = $(525000 - 30000)/(603{,}603.5) = 82\%$
  (Grader's Note: 603,603.5 was the calculated RBC requirement from part b.)
  This puts the insurer in the company action level since ratio between 75% and 100%.
  The company must submit a report on how they will reduce risk or raise capital.
  Regulator is not required to act.
- Adj Surplus = 495,000
  Ratio = $(495K/1.204M * .5) = 82\%$ → Between 70% and 100%.
  (Grader's Note: 1.204M was the calculated RBC requirement from part b)
  Authorized Control Level
  -Regulator can take control of company but still discretionary
  -No action needed from company.
  (If candidate used calculated RBC from Part B (even though RBC may not be correct) and

matched the ratio to appropriate level with correct responses from company and regulator then full credit was given)
EXAMINER'S REPORT
• Most candidates produced the five components of the credit risk charge, and candidates who moved ½ the reinsurance charge away from final credit risk charge were able to distinguish themselves amongst all candidates • The RBC formula is essential knowledge for part b and most candidates were able to produce the formula. Some candidates transferred charges between the components. Most candidates were able to identify that part a was actually calculating R_3. • Candidates performed the ratio calculation well generally, but the ratio was the most difficult aspect of the question since the surplus must be adjusted correctly. Candidates were able to distinguish themselves by adjusting the surplus correctly. The remaining components of part c were from the text and generally provided little trouble to candidates. Some candidates did not fully answer the question since they did not list responses for both regulator and company actions. • Question 20 was straight from the syllabus texts. There was no higher level of knowledge other than reproducing exhibits and ideas studied from the reading material.
Part a
• Candidate was expected to know the charges composing the credit risk charge. • Candidate was expected to recognize that ½ of reinsurance recoverable charge must be removed in order to arrive at **final** charge as requested by the question. • In order to receive full credit, the candidate must combine the 5 related credit risk charges which were given. Remove half the charge for reinsurance recoverables. Then sum these amounts to receive the final charge. • Common Errors -Did not remove ½ reinsurance recoverable charge -Removed ½ total of all charges (i.e.: 0.5*2166=1083) -Left out one or more individual credit charge components
Part b
• Candidates were expected to know the RBC formula and correctly produce the majority of its components. • In order to receive full credit, the candidate must correctly calculate R_0 through R_5 and apply the RBC formula correctly to produce the final RBC charge. • If the candidate identified their answer for part a as the R3 component, credit was given for R_3 even if part (a) was done incorrectly. • Common Errors -Classified risk charges as the incorrect component of the RBC formula. -Subtracted the Excessive growth penalty from R4 and R5 instead of adding. -Used an incorrect formula for RBC.
Part c
• Candidates were expected to be able to match the calculated ratio to the correct action level and produce the appropriate company and regulator response. Candidates were not

expected to produce the correct ratio since it required adjusting surplus correctly.

- In order to receive full credit, the candidate must correctly calculate the RBC ratio and match it to the appropriate action level. The candidate must then translate this action level to the appropriate company and regulator response.
- If the candidate utilized the RBC requirement calculated from part B even though it was calculated incorrectly, the candidate can receive credit for the ratio calculation if performed correctly.
- Common Errors
  -Not dividing ratio by ½ but relying on the ranges (<70,70-100,100-150, and 150-200)
  -Did not remove the Non-Tabular Loss & LAE discount from Surplus
  -Removed Tabular Loss & LAE discount for indemnity from the Surplus
  -Added Non-Tabular Loss & LAE discount to Surplus
  -Added Tabular Loss &LAE discount for indemnity to the Surplus
  -Matched Calculated Ratio to Wrong Action Level
  -Did not provide action from company based on RBC Model Act
  -Did not provide action from regulator based on RBC Model Act

QUESTION 21	
TOTAL POINT VALUE: 3.00	**LEARNING OBJECTIVE: C3**
SAMPLE/ACCEPTED ANSWERS	

Part a: 0.5 point

SAP
- Regulators

GAP
- Investors
- Shareholders
- Creditors
- Management

Part b: 1.0 point

- Under SAP, all policy acquisition costs must be recognized immediately. Under GAAP, cost can be deferred over the life of the contract.
  SAP does not allow discounting unless it is for work comp (tabular) or the regulator permits a non-tabular discounting. GAAP allows the SAP discount to be used, but the rate can differ from the risk free rate used in SAP.
- DAC
  SAP: not allowed
  GAAP: amortized pro-rata over policy life
  Discounting
  SAP: generally not allowed except tabular indemnity WC
  GAAP: allowed when the pattern is known or can be reasonably estimated.
- SAP
  DAC: not allowed. All expenses charged when they incur.
  Discounting: not allowed in general (exceptions – indemnity portion of WC, where allow by regulators on an exception basis.)
  GAAP
  DAC: allowed. Costs associated w/ the acquisition & issuance of policies are capitalized & amortized as an asset over time.
  Discounting: generally not used by company. But is allowed if payment pattern is known or can be reasonably estimated.
- <u>SAP</u>
  DAC – does not exist
  Discounting – allowed if tabular, if mono-med med, or have commissioner approval
  <u>GAAP</u>
  DAC – allowed to offset costs (asset)
  Discounting – allowed if payment pattern can be reasonably estimated

Part c: 1.0 point

- SAP is focused more on solvency, so by recognizing all acq costs at the beginning of the contract, it reflects that the company does not have that cash available to pay claims, which is a conservative approach. GAAP allows expenses to match revenues, which is more

important for investors as it more accurately reflects the business. For discounting, the use of the risk free rate in SAP is a conservative measure, giving the company the least reduction to loss reserves, focusing on solvency. In GAAP, if the company believes they can earn a different return, they should reflect it in order to give investors a better picture of the company.

- DAC/SAP – expense already incurred not available in liquidation
  DAC/GAAP – matching earning of revenue to smooth outcome
  Disc/SAP – Generally not allowed to provide additional cushion in liquidation
  Disc/GAAP – allowed if reasonably estimable. To provide more accurate picture of business
- <u>DAC</u>: SAP – more conservative, better reflects value in liquidation
  GAAP – better picture of the insurer's profitability
  <u>Discounting</u>: SAP = better consistency between firms, easier for regulators to understand insurer financial condition
  GAAP – better aligned w/ the underlying economics

Part d: 0.5 point

- Rental fees can be expensed, so it could reduce income tax. Furniture is a non-admitted asset, so it reduces the surplus.
- Furniture is non-admitted under SAP. Renting dramatically reduces up-front costs and avoids tying up capital.
- By renting, the insurer is realizing the cost of the furniture over several years rather than paying a lump sum for a non-admitted asset.

EXAMINER'S REPORT

Part a

Very few candidates received less than full credit on this part. Those that did not receive full credit generally provided answers that were too broad in their GAAP response such as "Stakeholders" and "Industry".

Part b

Candidates generally performed very well with respect to the DAC treatment in both SAP and GAAP. The most common mistake on this part was generalizing the loss reserve discount treatment for SAP and GAAP into a simple "Yes" or "No" response. For full credit, candidates had to recognize that there were instances when discounting is allowed, although it was not required to list each instance. In general, candidates seemed to believe GAAP allows much broader loss reserve discounting than it does. Specifically, many candidates stated that GAAP always allows, or even requires, discounting of loss reserves. Very few candidates stated that the primary difference between GAP and SAAP loss reserve discounting is the discount rate allowed. Another, less common, mistake was failing to mention the accounting treatment of loss reserve discounting altogether.

Part c

For full credit, a justification for both discounting and DAC, for both SAP and GAAP, was required (four statements of justification). The justification should show that the candidate understands the focus of SAP and GAAP, as well an understanding of the accounting item. Candidates that simply stated that the discounting and DAC treatment were "more conservative" received partial

credit.
Part d
Candidates struggled to achieve full credit on this part more than the other parts of this question. The candidate was expected to identify office furniture as a non-admitted asset, state its effect on surplus, and state why renting is relatively beneficial. Candidates were given full credit for adequately comparing renting to buying, even without specifically mentioning "non-admitted asset" or "surplus". While most candidates explained the effect that buying would have, the most common mistake was failing to mention the relative benefits of renting. Some candidates stated that renting was not preferable to buying, however, they were unable to adequately support their position.

QUESTION: 22	
TOTAL POINT VALUE: 1.25	**LEARNING OBJECTIVE: C3**
SAMPLE/ACCEPTED ANSWERS	

Part a: 0.75 point

- Incorporate cash flows for the cost of capital
- Use payout pattern and risk free rate to discount cash flows
- Incorporate illiquidity adjustment into discounting
- Calculate unbiased estimate of expected payments
- Calculate adjustment for time value of money
- Calculate margin for adverse development

Part b: 0.5 point

With very low investment yields, the discount factor is very small. After adding the risk margin you may end up with a higher reserve than SAP reserve.

Higher than statutory. Discount will be minimal which and unlikely to be bigger than the effect of adding the margin and calculating non-deficient estimated reserves.

The fair value will be higher than stat basis reserves since investors need some return on top of the discounted reserves. Since the investment yields are low, the present value of this return is high and will bring the fair value of reserves up.

EXAMINER'S REPORT

The candidates were expected to know what adjustments are needed to loss reserve liabilities under the fair value accounting paradigm and how the risk margin impacts the reserves in fair value accounting.

This question was intended to test candidate's basic understanding of fair value accounting.

Part a

Most candidates wrote a list for part this subpart. The question explicitly asked for candidates to briefly describe their responses. Candidates that provided a list for their response, e.g. "discount", did not receive credit. Rather, a fuller answer was expected to demonstrate knowledge of the material, such as "Discount the unbiased reserve for time value of money using a risk-free rate, duration-matched to the payout of the liabilities". As indicated in the sample/accepted answers, we accepted much shorter versions than that provided in this example. However, a more fuller response than a one to two word list was expected.

A handful of candidates wrote adjustments to other items to the balance sheet which were incorrect.

Part b

Candidates needed to justify their "higher" response. Without justification, no credit was awarded.

Only writing "higher" did not receive credit because it did not demonstrate knowledge;

justification was needed to support the response.

QUESTION 23	
TOTAL POINT VALUE: 2.75	LEARNING OBJECTIVE: C3

SAMPLE/ACCEPTED ANSWERS

Part a: 2 points

	2009	2010	2011	2012
Initial	12,375	19,450	23,950	22,550
Cum Paid as of				
1-yr Later	2,625	8,250	10,250	
2-Yr Later	5,975	16,450		
3-Yr Later	7,575			
Cum Inc Re-Stated as of				
1-yr Later	10,875	20,450	24,200	
2-Yr Later	9,375	21,950		
3-Yr Later	8,875			
Adv Dev	-3,500	2,500	250	

Part b: 0.75 point

- In 2009 reserves went each subsequent year, meaning the company was overly conservative. In 2010, they over corrected as loss reserves crept upwards yearly. Since 2011, once they probably started to get a better handle on their book of business, reserves have stabilized.
- They were originally reserving too high, as seen by the -3,500 deficiency. Since then, reserves have increased as original years age (2,500, 250). Likely company changed reserving methods as it gained experience.
- For year 2009 and 2011, company experienced significant favorable reserve development. However, in 2010 company experienced significant adverse development. It seems that company's reserving adequacy is not very consistent.
- Overall recorded Loss & LAE reserve have been very accurate. There has been some development from year to year such as calendar year 2011, but as the company has matured, reserves show little long term development.
- The first year (2009), with no historical data, they booked a conservative estimate and then have brought it down over time. For the second AY (2010), they reacted to lower paid losses that last year and booked a low estimate. That was premature, and they have had to increase reserves over time. For 2011-2012, they've booked a more stable number similar to 2009, which is likely also conservative. However, with limited data it is better to error on the side of conservatism.

EXAMINER'S REPORT

Part a

The candidate was expected to know how to put together the 10-year development exhibit found in the 10-K based upon Schedule P data that was provided within the question.

Candidates performed poorly on this question. The large majority of candidates were unable to reproduce the exhibits as they are presented in the 10-K. Given the responses observed, it was clear to us that the candidates were not prepared to answer this type of question. One possible reason is that it may not be clear from the learning objectives stated in the syllabus that the candidate should know this material. Considering this, the MQC score was set at 0 for this question, so as not to penalize candidates for this misunderstanding.

Part b

The candidate was expected to be able to analyze the resulting 10-K data and be able to comment on the inconsistencies of the reserving practices between years. If the candidates did not populate the 10-K exhibit correctly in Part a, the expectation would be for the candidate to use the Schedule P data provided to answer the question in a very similar manner.

Candidates performed slightly better on Part b. There were still a number of candidates that failed to answer the question or gave answers that received 0 points. Even though most candidates were not able to answer Part a, there were a good amount of candidates that were able to use the data that was provided to generate a sensible solution that differed from the original model answer.

QUESTION 24	
TOTAL POINT VALUE: 4.75	**LEARNING OBJECTIVE: D**
SAMPLE/ACCEPTED ANSWERS	

Part a: 2.5 points

To receive full credit, the candidate must provide justification of reasoning for the selection of the three possible materiality standards, as well as the final selection. This proven understanding was determined to not be fully developed by any candidate. Much discussion took place around grading this part, and the fact that this was not immediately obvious from the question, as evidenced both from candidate answers and prior observations of the examination committee, was taken into consideration when arriving at the MQC score.

10% of Loss and LAE Reserve = .10 * 1250 = $125 M – This is a large amount of change in the Loss and LAE Reserve. The intended users of the SAO, company management and regulators, would be interested in a reserve movement of this magnitude.

10% of PHS = .1 * 400 = $40 M – This amount would trigger an IRIS ratio.

Reserve Development that would trigger a change in RBC = Total Adjusted Capital - 200% of RBC = 400 - 150 * 2 = $100 M – Would result in increased regulatory attention, requiring company to submit plans to the regulator.

The regulator and company management are the intended users of the SAO, and as such, are focused on the solvency of the insurer, making all of the above valid options. Given that the smallest of these three is the 10% of PHS, this is the one I would select as it is the most restrictive/conservative.

Various justifications received credit, depending on the items selected by candidate (e.g., user is a regulator, uses SAO for monitoring financial health, therefore need materiality standard that addresses reserves/surplus; or the intended user is the regulator, regulators are concerned with reserve adequacy and need to monitor RMAD, therefore need materiality standard that addresses reserves; if the intended user was identified as company management, similar answers were given credit here as well.).

Part b: 0.5 point

The Relevant Comment paragraph and Exhibit B of the SAO
Also accepted credit for identifying the "Disclosures" paragraph in lieu of Exhibit B

Part c: 0.5 point

Note: this will depend on the materiality standard selected in part a.
Carried Reserves + Materiality Standard = 1250 + 40 (10% PHS) = 1290
This is in the range of reasonable results (between 1100 and 1320) so there is a risk of Material Adverse Deviation.
Full credit was given when selecting an appropriately supported materiality standard plus the carried reserves and noting that the sum was outside (inside) the range of reasonable results which indicated that RMAD is not (is) present.

Part d: 1.25 points

In order to establish my materiality standard, I examined three amounts including 10% of the Company's net loss and LAE reserve, 10% of the Policyholder Surplus and the amount of reserve

change that could result in a change in RBC action level. My materiality standard selected which is the smallest of these three amounts is 10% of PHS or $40 Million. I have identified the major risk factors for this company's reserves as _____, _____, and _____. The existence of these risk factors leads me to conclude there is a risk of material adverse deviation for this company.

Note: Candidate was not expected to provide any specific risk factors. Instead, was expected to know that risk factors needed to be iterated if there was a risk of RMAD. If there was not a risk of RMAD, candidate received credit for simply stating that RMAD was not present, as risk factors are not needed.

EXAMINER'S REPORT

Part a

No candidate received full credit for this part. Candidates were expected to list and calculate three materiality standards, as well as justify their selected materiality standard. Most candidates received at least partial credit by listing and calculating three materiality standards. Candidates who received greatest credit also provided sufficient justification for the selected standard.

Full credit included expectations above, as well as mention of the intended users of the SAO and materiality standard's influence on their decision making.

Common errors included using different percentages of the same item (e.g. 5% of surplus, 10% of surplus – one of these is assumed a better standard than the other), not calculating the dollar amount of the standard, not providing justification for selection, and using net income (not of interest to intended users of SAO). Standards based on net income and the actuary's range did not receive credit, as intended users of the SAO are focused on solvency, and the materiality standard is derived independently from the actuary's range.

Part b

Full credit was awarded for having both Exhibit B (Disclosures) and the relevant comments sections. Nearly all candidates correctly identified at least one location.

Candidates commonly erred by listing Scope, Exhibit A, and AOS.

Part c

Full credit was awarded for correct calculation and deduction of whether or not RMAD exists. Candidates fared well, with the majority obtaining full credit.

Common errors included using the actuary's central estimate instead of carried reserves as base of deviations, finding "risk of favorable deviation" by using the low end of the actuary's range, and drawing an incorrect conclusion based on the calculation.

Part d

This part was less straightforward, delving into details of the relevant comments paragraph. Given that three of the necessary items were derived in earlier parts of the question, candidate was expected to know that these items were included in the relevant comments paragraph.

Candidates who answered this part tended to score well, listing three of the four required items.

Full credit was awarded for hitting each of the four required items:

- Materiality standard in dollars
- Basis for standard
- Whether or not RMAD exists
- Risk factors (problem did not give clues, any risk factors or note to that extent received credit) – if RMAD does not exist, risk factors are not needed

Answers in bulleted/list format were accepted, paragraph form was nice but not necessary.

Exclusion of one of the items above was the most frequent error.

QUESTION 25	
TOTAL POINT VALUE: 2.25	**LEARNING OBJECTIVE: D1**
SAMPLE/ACCEPTED ANSWERS	

Part a: 0.75 point

- What: discount rate used, tabular discount amount, non-tabular discount amount
  Where: Exhibit B, Relevant Comments
- Need to disclose the discounting rate used, basis, and discount amount. Disclose in SAO – Relevant Comments
- In Relevant Comments, should disclose amount of discount, rate, and basis of rate. Also in Exhibit B, show discounted reserves.

Part b: 0.5 point

- This must be disclosed in the Scope Section of the SAO. It must be disclosed that the review was performed and the results were found reasonable by another actuary and that an independent review was not performed.
- In the SAO opinion section, disclose reliance on other actuary's opinion. Also disclose name, affiliation, and qualifications of other actuary.
- In the Scope Section, actuary should disclose that the review of the other actuary's work took place and the extent of the review.

Part c: 0.5 point

- Disclose in the Opinion Section, providing a qualified opinion due to unreliable GL data.
- Qualify opinion, disclose portion of excluded reserve data and why. Disclose in Opinion Section, RMAD, Scope.
- In Opinion Section, a qualified opinion would be given for a disclosed amount (30M) and why (data issues)

Part d: 0.5 point

- Disclose in Relevant Comments section under Methods and Assumptions explaining change in method, reason for change, and would quantify the impact of the change in method.
- Yes the actuary should include a disclosure describing the change in methodology. This should be disclosed in the Opinion Paragraph.
- Yes, since change is material must describe change and effect in Relevant Comments in section: changes in methods and assumptions.

EXAMINER'S REPORT

- Most candidates got at least some credit on each sub part. Candidates scored better on parts a and d, and not as well on parts b and c.
- In each section candidates were told to provide where the disclosure was needed and what was needed to be disclosed. However, many candidates only provided one or the

other (what but not where, or vice versa).   Credit was not given if candidates neglected to provide both items.

- Many candidates did not receive full credit because they gave answers that were too general. For example, saying "this needs to be disclosed" rather than exactly what "this" is. Or "disclose in SAO" rather than "SAO Opinion Section" or "SAO Scope Section"

Part a

- Candidates received full credit by stating 2 items to disclose, and where the disclosure was required.
- Many candidates listed only one item to disclose, or failed to state where disclosure was required.

Part b

- Candidates received full credit by stating what to disclose and where the disclosure was required.
- Many candidates stated only what to disclose, or where the disclosure was required, but not both.

Part c

- Candidates received full credit by stating what to disclose, and where the disclosure was required.
- Many candidates stated only what to disclose, or where the disclosure was required, but not both.

Part d

- Candidates received full credit by stating what to disclose, and where the disclosure was required.
- Many candidates stated only what to disclose, or where the disclosure was required, but not both.

QUESTION 26	
TOTAL POINT VALUE: 2.50	**LEARNING OBJECTIVE: D**
SAMPLE/ACCEPTED ANSWERS	

Part a: 1 point

- Insurer's Net Reserves, Gross Reserves, Net Loss & LAE Reserves, Gross Loss & LAE Reserves, Management Carried or Booked Reserves.

   Also found in Schedule P, Annual Statement, Schedule F – Part 8, IEE, UW Investment Exhibit, Statement of Actuarial Opinion, Balance Sheet, among other places.

- One year development for each of the past 5 years; whether the insurer experienced adverse development in excess of 5% of surplus (multiple variation of this wording accepted)

   Also found in Schedule P, 5 Year Historical Data, Annual Statement, among other places.

- Name of Opining Actuary, Name of Appointed Actuary

   Also found in General Interrogatories, Statement of Actuarial Opinion, among other places.

Part b: 1.5 points

Individual Arguments Listed below. Part B required 2 different arguments with examples.

- It is valuable for regulators to know the position of an insurer's reserves relative to the actuary's range of reasonable values. For example, say Insurer A's carried reserves are at the bottom end of the actuary's range, while Insurer B's carried reserves are at the high end of the actuary's range. If you only look at the Statement of Actuarial Opinion for the two insurers, you will simply see that both insurers have reasonable reserves. However, regulators may want to focus more attention on Insurer A.

- The Actuarial Opinion Summary provides the range of reasonable reserves which isn't provided in the Statement of Actuarial Opinion. This can be helpful for regulator's evaluating the financial health of the company. A wide range of reserves may highlight a higher risk of material adverse deviation.

- If an insurer experience adverse development in excess of 5% of surplus for three or more of the past five years, it is valuable for regulator's to read the actuary's opinion on the reason for that adverse development. For example, if an insurer experienced significant adverse development due to an unexpected influx of asbestos related claims, the insurer's solvency may be in question.

- The AOS provides the opining actuary's range which is not found elsewhere. It needs to be confidential so regulators, but not the general public, are aware of how wide the

reasonable range is. If the range is wide, with the material standard it would show MAD but a tighter range supports the idea that RMAD is less likely.

- If the booked loss reserves fall into the range provided by the actuary, the difference between the two isn't in the SAO, but is in the summary. This is useful in case the booked loss reserves are near the low end of the reasonable range and there might be more risk of material adverse deviation.

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- Actuary range: this is unavailable in AS, and is a professional measure of where the booked reserve should reasonably fall according to Actuarial methods & standards. For a company switching from all short tail to all long tail lines, they would need to reserve additional $$ to account for larger/more long term IBNR. Without the actuary opinion on range and accompanying analysis, the company might be unaware and just retain same reserve.

  Several other specific examples could include legal environment, environmental claims, high layer excess policies, storm losses, change in lines, etc.

EXAMINER'S REPORT
This question highlights whether Candidates can identify items contained within the Actuarial Opinion Summary and understand which items are proprietary and those that can be found elsewhere. Candidates generally did not score well, particularly on Part (b). Many candidates mixed up the Statement of Actuarial Opinion and the Actuarial Opinion Summary and generally provided vague answers with no specific examples.
Part a
Candidates performed better on part (a) than (b). Common errors included: • Getting the Statement of Actuarial Opinion and Actuarial Opinion Summary mixed up (e.g. central and range of estimates is not provided in the Statement of Actuarial Opinion particularly for a reasonable opinion, UEPR reserve for long duration contracts, materiality standard, etc.) • Providing "Loss" and "LAE" reserves as two separate items with the AOS • Providing vague responses ("actuary name" – which actuary?; "booked number" – of what?) • Many candidates listed items in the Notes to the Financial Statement that are not part of the AOS (e.g. Uncollectible reinsurance, discounting, asbestos/environmental reserves)

Part b

Candidates generally performed very poorly on this question and full credit was rarely awarded. Common mistakes included:

- Very few candidates provided a specific example as the question requires. When examples were given, they were often provided without any specific explanation on why it is important to have. Examples:

  ----just showing the range of reasonable reserves and the carried point estimate with no explanation

  ---- The AOS is the only place where the causes of adverse deviation are discussed (if >5% of surplus in 3 of 5 years).

  ---- Not everything can be found in the Annual Statement or SAO. Neither include the Actuary's estimate (point or range). Can use this to assess how actuary's estimate different from booked.

- Providing vague answers or key words without sufficient reasoning (e.g. "The AOS is helpful because it provides the actuary's range." "It helps us evaluate the company." "Insight into actuarial process", "highlights more info than AS".).

- Many candidates mentioned adverse development in excess of 5% of surplus for three or more of the five years, but several failed to explain that it is the actuary's commentary on this development that is helpful for regulators. Other exhibits (as demonstrated in part (a)) can help us identify whether the insurer did experience this adverse development

- Many candidates mentioned IRIS ratios 11, but this does not have the same threshold as the test in the AOS

- Comments on amounts excluded from reserve opinion (qualified opinion)

- Schedule P reconciliation

- Candidates often provided the same example for both arguments

- Candidates mentioned collectability of reinsurance as something the AOS can highlight without any explanation; other exhibits exist that can highlight this

QUESTION 27	
TOTAL POINT VALUE: 4.25	**LEARNING OBJECTIVE: E**
SAMPLE/ACCEPTED ANSWERS	

Part a: 1 point

- 10-10 rule = reinsurer must have 10% or greater chance of realizing a 10% or greater loss
- ERD: The probability of a NPV loss times the average severity of loss given that there is a loss must be >1%.
- Tail value at risk—looks at the average loss exceeding a certain percentile.
- CTE—Conditional tail expectation—the expected loss conditioned on an extreme event (i.e. a loss beyond a certain percentile)

Part b: 0.5 point

- A situation where is a 5% chance of loss but 25% likely loss would not pass 10-10 but would pass ERD.
- If there is a large tail in distribution of loss. This would suggest ERD as it would take it into account.
- If extremely large values in tail, TVaR may be more appropriate.
- ERD would be recommended if state wants to have more stringent rules for risk transfer testing (can ↑ERD to 2-3%)
- High probability of loss with low severity may indicate risk transfer on 1% ERD but not via the 10-10 rule.

Part c: 1.5 points

- The discount rate is needed. This is needed to actually discount the losses. The risk-free rate is recommended.
- Premium. This is used to determine if there is a loss to the reinsurer or not.
- Payment pattern: would need this to consider the time value of money
- Contractual features which limit loss such as loss retro caps, which would need to factor these in as they may limit loss
- Simulated losses → estimates frequency and size of loss to reinsurer
- Aggregate loss distribution to determine the probability of achieving a loss
- Losses—this would be the responsibility of the reinsurer and would also help determine if there is risk transfer

Part d: 1 point

- Profit commissions should NOT be included as we are only concerned with scenarios resulting in a loss. Profit commissions obviously do not exist when there is a loss.
- Reinsurance expense: should be excluded because it is not cash flow between insurer and reinsurer
- Commutation clauses—automatic, specifically. Any element which limits the reinsurers risk should be evaluated.
- Loss distribution—must choose distribution that matches how losses act
- Selecting loss distribution to use. Must be careful as losses depend on this, particularly in the tail.
- Interest rate used: too low, will overdetect risk transfer
- Model parameters. Either implicitly or explicitly accounted for, the first is usually the case.
- Are assumptions taken from reinsurer pricing? These tend to be more conservative and

thus overestimate risk transfer in some cases.
- Interest (discount) rate—risk free rate often used, but insurer investment return might be higher than risk free rate. However that would mean risk transfer would be more likely for firms with lower investments.
- Parameter risk – need to keep in mind risk associated with selecting wrong parameters initially
- Discounting should be the same in all aspects and use, at minimum, the risk free rate.
- Allowing cash flow times to vary is more accurate, but it complicates the process.
- Treat all payments from cedant to reinsurer as premium; avoids labeling of some payments as fees, ability to game contract to pass risk transfer if it otherwise wouldn't
- Payment pattern—might be different for particular company than industry average
- Premium used: actual GWP is best. Estimated premium will overdetect risk transfer. Initial premium is not always accurate.
- If premium is adjustable based on loss outcomes, then premium must also be modeled to reflect this. This will tend to reduce the severity of loss scenarios and make it more difficult to determine risk transfer

Part e: 0.25 point
- If it fulfills the substantially all exception
- If contract transfers all risk (aka 100% QS) from insurer to reins on a profitable book of biz

EXAMINER'S REPORT

Candidates performed moderately well, though many seemed to struggle with parts of the question. Very few candidates received full credit.

For this question, candidates were expected to fully understand the tests for risk transfer. This includes how to calculate the tests, which test would be preferred in certain situations, practical considerations, and exceptions. Most candidates were able to at least identify two tests and correctly explain at least one of the tests. Several candidates struggled with part b—explaining a scenario in which one test would be preferable, and many struggled with part c—describing three distinct data elements needed to perform the test. Refer to the sections below for common errors in these parts.

Part a

Candidates generally performed fairly well on this part. To obtain full credit, candidates were expected to both identify and correctly explain both tests listed. For the ERD, candidates were expected to describe the basic calculation. For the 10-10 rule, candidates were expected to know that it requires a 10% chance of a 10% loss. For all other tests, candidates were expected to explain how those methods test for risk transfer.

Common errors included:
- Listing "timing risk" and "underwriting risk" as the two tests. These are two types of risk, not tests for risk transfer analysis.
- Listing Expected Policyholder Deficit (or EPD), rather than Expected Reinsurer Deficit (or ERD).
- For ERD, listing the 1% threshold, but not explaining how the test is calculated.
- For those that listed VaR, TVar, or CTE as one of the two tests, the explanation was often missing, incorrect, or insufficient

- Listing "Monte Carlo Simulations" as a test—not a test in and of itself, but part of other tests.
- Listing "Cash Flow Analysis" as a test, without mentioning any other details or thresholds—not a test in and of itself, but part of other tests.

Part b

Candidates were expected to give a scenario in which one test was preferred. To get full credit, a candidate had to correctly explain the scenario and identify which test was preferred. Many candidates correctly answered this question, but there were a significant number of responses that included the errors listed below.

Common errors included:
- Answers where candidates neglected to give a scenario, but rather just stated "ERD is better" or "10-10 is better"
- Describing ERD as better because it can incorporate loss simulations—these can also be incorporated into the 10/10 rule
- Describing ERD as better because it uses net present values—10/10 rule can also be evaluated on present values

Part c

To receive full credit, candidates needed to identify and describe the purpose of three distinct data elements. Candidates struggled most with this part of the question.

Common errors included:
- Failure to describe the purpose of the data element. Many responses explained the data element or listed considerations related to the data element, but failed to describe the purpose.
- Restating the same data element. For example, "loss distribution" and "expected losses" were considered one data element, as expected losses are derived from the loss distribution. Additionally, "frequency of losses of a given size" and "severity distribution of losses" were counted as one data element, as these both describe the loss distribution.
- Listing treaty terms, commutation clauses, etc. These are not data elements. (Limits, however, was accepted as a data element)
- Listing reinsurer expenses. These are not considered in risk transfer.
- Listing policyholder surplus as the basis needed for determining if a loss exists.

Part d

To obtain full credit, candidates needed to identify and explain two separate practical considerations. Most candidates did fairly well on this part.

Common incorrect answers included:
- Answers that lacked explanation for the considerations
- Listing timing and underwriting risk as the two considerations; underwriting risk is what the test is testing for. Timing risk was accepted if it referred to commutations or other treaty terms limiting the timing risk

Part e

Candidates were expected to be able to identify the "substantially all" requirement. Listing this rule was all that was required for full credit.

Common incorrect answers included:

Manager discretion determines whether a treaty is risk transfer

Exceptions made by the insurance commissioner can deem a treaty count as risk transfer.