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Exam 6-United States

Regulation and Financial Reporting (Nation Specific)

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October 31, 2012

4 HOURS

INSTRUCTIONS TO CANDIDATES

1. This 87 point examination consists of 31 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.

   - 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. Writing will NOT be permitted during this time and you will not be permitted to hold pens or pencils. You will also not be allowed to use calculators. The supervisor has additional exams for those candidates who have defective exam booklets.

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

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

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

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

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

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

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

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

10. The exam survey is available on the CAS Web Site in the "Admissions/Exams" section. Please submit your survey by November 15, 2012.

END OF INSTRUCTIONS

EXAM 6 – UNITED STATES, FALL 2012

1. (3 points)

   A state currently has a file-and-use rating law for private passenger auto insurance, and is considering changing to a prior approval rating law.

   a. (1.5 points)

      Briefly describe three market conditions that might prompt the state to consider this change, as well as how prior approval might address each condition.

   b. (0.5 point)

      After the state implements the change to prior approval, several insurers have indicated that they may stop selling private passenger auto insurance in the state. Briefly describe two changes a regulator might make to the prior approval system to address this turn of events.

   c. (1 point)

      Discuss two reasons private passenger auto insurance is more regulated than commercial general liability insurance.

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2. (2 points)

   a. (1 point)

      Briefly describe four functions of the National Association of Insurance Commissioners (NAIC).

   b. (0.5 point)

      Discuss one reason a state legislator might use to support the adoption of a proposed NAIC model law.

   c. (0.5 point)

      Discuss one reason a state legislator might use to oppose the adoption of a proposed NAIC model law.

CONTINUED ON NEXT PAGE

3. (3 points)

   a. (0.5 point)

      Briefly describe two reasons property-casualty insurers value being rated by rating agencies.

   b. (1 point)

      Provide two ways in which state regulators and A.M. Best differ in their evaluation of an insurer's capital adequacy.

   c. (1.5 points)

      Describe three procedures for monitoring insurer financial solvency, as recommended by the NAIC guidelines.

CONTINUED ON NEXT PAGE

4. (3 points)

   a. (2 points)

   Briefly describe two circumstances that would lead to a company being placed under each of the following levels of regulatory control and two specific actions that the regulator is authorized to take for each:

   - Mandatory corrective action
   - Administrative supervision

   b. (0.5 point)

   Define the regulatory action of receivership.

   c. (0.5 point)

   Describe one possible outcome from the regulatory action of receivership.

CONTINUED ON NEXT PAGE

5. (2 points)

   a. (1 point)

      Describe each of the following acts:

      - Clayton Act
      - Robinson-Patman Act.

   b. (0.5 point)

      Briefly describe two impacts that the *U.S.* v. *South-Eastern Underwriters Association (SEUA)* decision had on the application of the acts in part a. above.

   c. (0.5 point)

      Briefly describe two NAIC recommendations in response to the acts in part a. above.

CONTINUED ON NEXT PAGE

6. (1.5 points)

   a. (0.5 point)

      Briefly describe two key features of the Sherman Anti-Trust Act.

   b. (1 point)

      Fully explain how the Sherman Anti-Trust Act has been applied to the business of insurance, citing two key legislative or judicial decisions that affected its application.

CONTINUED ON NEXT PAGE

7. (2.25 points)

   A hospital is having difficulty purchasing medical malpractice liability insurance with an admitted carrier. To obtain medical malpractice liability coverage, it is considering three options:

   - Joining a captive insurance group, or
   - Joining a risk retention group, or
   - Purchasing its liability coverage from a surplus lines company.

   Select one of the three options above for the hospital and fully justify the selection by including an analysis on the relative advantage and disadvantage of each of the three options.

CONTINUED ON NEXT PAGE

8. (1.5 points)

   a. (1 point)

   Describe two arguments in favor of the 2010 Dodd-Frank Act, from the perspective of a large non-admitted insurer that purchases reinsurance for its property business.

   b. (0.5 point)

   Briefly describe two arguments against the 2010 Dodd-Frank Act, from the perspective of a state insurance regulator.

CONTINUED ON NEXT PAGE

9. (2 points)

   a. (0.5 point)

   Briefly describe two difficulties in assessing the validity of asbestos claims.

   b. (0.5 point)

   Briefly describe two factors that tend to cause the asbestos litigation system to become more inefficient over time.

   c. (1 point)

   Describe two ways in which asbestos litigation might have turned out differently, had the Daubert decision occurred before the asbestos crisis.

CONTINUED ON NEXT PAGE

10. (2.25 points)

a. (0.5 point)

Discuss the degree to which the Social Security program achieves actuarial equity.

b. (0.5 point)

Discuss the degree to which the Social Security program achieves social equity.

c. (0.5 point)

Briefly describe two reasons a fully funded Social Security program may be considered unnecessary.

d. (0.75 point)

Fully discuss the impact of a temporary increase in birthrates on Social Security's short-term and long-term solvency.

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11. (3 points)

Three models for government involvement in workers' compensation state funds are:

- Competitive state funds
- Partner with private insurers
- Exclusive state funds

Select the most economically efficient model. Fully justify the selection, including a comparison of the following three characteristics for each model: profitability, expense load and availability of coverage.

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12. (3 points)

The following are goals of government insurance programs:

i. To fill insurance needs unmet by private insurers

ii. To compel people to buy a particular type of insurance

iii. To achieve collateral social purposes

a. (1.5 points)

Identify and briefly describe a government insurance program that was initially created to achieve each goal. Choose a different program for each goal.

b. (1.5 points)

Evaluate the effectiveness of each program identified in part a. above, in achieving the goal.

CONTINUED ON NEXT PAGE

13. (3 points)

Three types of residual market auto insurance programs are:

- Automobile insurance plans (AIP)
- Reinsurance facilities (RF)
- Joint underwriting associations (JUA)

a. (1.5 points)

Compare the following for AIPs and JUAs:

i. How drivers are assigned to an insurer
ii. How rates are set once a driver is assigned to an insurer
iii. How profit and loss are allocated to participants

b. (0.75 point)

An insurer prefers low-risk drivers because its rating plan does not charge an adequate premium for high-risk drivers. Justify which type of residual market auto program the insurer would prefer. The justification should include two supporting reasons.

c. (0.75 point)

An insurer has a large market share across an entire state. The insurer has good claims handling practices that help reduce the average loss payment per claim. The insurer also has lower claims-handling expenses than the industry average in the state. Justify which type of residual market auto program the insurer would prefer. The justification should include two supporting reasons.

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14. (2.5 points)

The value of an insurance company's investment portfolio increased significantly during the year. The current portfolio is composed of 70% common stock and 30% bonds.

The company is considering acting on one of the following options before the end of the year:

Option	
1	Maintain the investment holdings.
2	Liquidate the current year's gains, and use all the proceeds to purchase needed office equipment.
3	Liquidate the current year's gains, and use all the proceeds to pay stockholder dividends.

a. (1.5 points)

Assess the impact on the current year's change in Statutory Policyholders' Surplus associated with each option.

b. (1 point)

Company management wants to reduce the asset risk charges in its risk-based capital (RBC) calculation while maintaining a reasonably high investment return and net income. Propose two investment portfolio changes that would help achieve this.

CONTINUED ON NEXT PAGE

15. (3.25 points)

Given the following information about a January 1, 2011 commutation:

- Two permanent total disability claims remained outstanding at the time of commutation.
- The two claims had:
  - Nominal loss reserves of $300,000 and $450,000, with present values of $200,000 and $300,000, respectively
  - Nominal loss adjustment expense reserves of $15,000 and $70,000, with present values of $10,000 and $40,000, respectively
- To commute the contract, the reinsurer paid the ceding entity $500,000 for losses plus $50,000 for loss adjustment expenses.

a. (1.5 points)

Identify and calculate three disclosures (other than the name of the reinsurer) the ceding entity is required to make regarding this commutation in its 2011 Notes to the Financial Statements.

b. (0.75 point)

Explain how the ceding entity must record this commutation in its 2011 Balance Sheet and Statement of Income, and identify where in its 2011 Statement of Income any subsequent gain/loss would be reported.

c. (0.5 point)

Quantify the impact of this commutation on the ceding entity's Policyholders' Surplus.

d. (0.5 point)

Provide two reasons why the ceding entity's commutation-related disclosures could be important to its regulators.

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16. (3.5 points)

An insurer writes one-year policies except for a single long-duration contract (Contract A). Contract A is a five-year policy effective January 1, 2009 with all premium collected on the effective date.

Using the information below (all figures are in thousands of dollars):

	Calendar Year 2011
Earned Premium (**excluding** Contract A)	97,000
Incurred Loss+LAE	84,000
Incurred Underwriting Expense	20,500
Net Investment Income Earned	2,500
Realized Capital Gains	4,000
Dividends to Policyholders	100
Dividends to Shareholders	200
Other Income/(Loss), including income taxes	(2,750)

	As of December 31	
	2010	2011
Net Unrealized Capital Gains	8,000	9,000
Non-Admitted Assets	13,000	11,500
Provision for Reinsurance	9,100	9,700
Net Deferred Income Tax	125	190
Policyholders' Surplus	50,000	

SSAP 65 Unearned Premium Reserve "Test" Values for Contract A	Test 1	Test 2	Test 3
As of December 31, 2010	24,000	27,209	24,100
As of December 31, 2011	21,000	20,690	19,150

a. (1.75 points)

Calculate the company's 2011 Net Income as reported in its 2011 NAIC Annual Statement.

b. (1.75 points)

Calculate the company's Policyholders' Surplus as of December 31, 2011.

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17. (2.75 points)

A property and casualty insurer wrote only two lines of business in 2010 and 2011: Private Passenger Automobile Liability (PPA-Liability) and Commercial Auto Liability. The data below is from the company's 2010 and 2011 Insurance Expense Exhibit (IEE) (all figures are in thousands of dollars).

	2010	2011
Net Investment Income	1,625	475
Realized Capital Gain		19,200
Unrealized Capital Gain	12,000	15,000
Policyholders' Surplus	94,000	88,800

	PPA-Liability		Total	
	2010	2011	2010	2011
Prepaid Expenses Incurred	24,980	33,650	52,880	61,400
Net General Expense Incurred	3,360	4,500	6,760	8,600
Dividend to Policyholders During the Year	420	500	670	810
Net Loss & LAE Incurred During the Year	42,400	41,700	77,700	78,200
Net Premiums Written During the Year	73,800	60,600	150,700	116,800
Net Premiums Earned During the Year	72,300	68,200	147,500	131,500
Net Loss & LAE Reserves at Year-end	21,900	33,300	44,600	64,300
Unearned Premium Reserves at Year-end	41,900	36,700	85,500	70,800
Agents' Balances at Year-end	8,400	19,600	17,200	37,800
Other Income Less Other Expenses	0	0	0	0

The following information was derived from the information above:

- Investment gain on funds attributable to insurance transactions for PPA-Liability in 2011 is 3,112.

- Investment gain on funds attributable to capital and surplus for PPA-Liability in 2011 is 6,867.

<<QUESTION 17 CONTINUED ON NEXT PAGE>>

17. (continued)

a. (1.25 points)

Calculate the IEE's Total Profit (or Loss) for PPA-Liability in 2011.

b. (0.5 point)

Describe one use of the IEE's Total Profit (or Loss) for a given line of business for the insurance company's internal stakeholders.

c. (1 point)

Relying solely on the company's IEE results, the company's regulator has determined that the company's PPA-Liability rates are barely adequate.

Explain why it may not be appropriate to rely fully on the IEE to determine rate adequacy of a line of business, and propose a more appropriate measure of profitability to the regulator.

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18. (5 points)

Using the following information from an insurance company's 2011 NAIC Annual Statement (all figures are in thousands of dollars):

Bond Description	NAIC Designation	Actual Cost	Fair Value	Par Value	Amortized Cost
US Treasury Bonds	1	21,564	20,931	19,000	21,333
Regional Energy Company	3	15,541	14,965	15,000	15,498
Collateralized Mortgage Obligations	5	8,082	8,657	11,000	8,207
Total Bonds		45,187	44,553	45,000	45,037
Total Common Stocks		12,500	11,000		

Schedule P Part 1 - Totals	Direct and Assumed	Ceded
Loss Payments	40,150	6,000
Defense and Cost Containment Payments	3,550	375
Adjusting and Other Payments	3,741	150
Salvage and Subrogation Received	1,750	
Losses Unpaid		
Case Basis	34,400	7,200
Bulk + IBNR	13,200	5,600
Defense and Cost Containment Unpaid		
Case Basis	3,300	350
Bulk + IBNR	7,500	700
Adjusting and Other Unpaid	3,600	20
Salvage and Subrogation Anticipated	1,900	

Balance Sheet Items (assets are stated on an admitted basis)

Item	Amount
Real Estate	
Properties occupied by the company	2,000
Properties held for the production of income	15,000
Properties held for sale	200
Cash	4,500
Net Deferred Tax Asset	10,000
Other Assets	2,300
Other Expenses	500
Ceded Reinsurance Premium Payable (net of ceding commissions)	400
Provision for Reinsurance	75
Common Capital Stock	400
Gross Paid In and Contributed Surplus	40,000

<<QUESTION 18 CONTINUED ON NEXT PAGE>>

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18. (continued)

a. (4 points)

   Construct the company's balance sheet as of December 31, 2011.

b. (1 point)

   Discuss two items (other than loss reserves) in the company's balance sheet that could present a risk to the company's financial health.

CONTINUED ON NEXT PAGE

19. (5.75 points)

Using the following information for an insurance company as of December 31, 2011 (all figures are in thousands of dollars):

	Reinsurer #1	Reinsurer #2
Status	Authorized	Unauthorized
Recoverables, Total	120	150
Letters of Credit	0	60
Recoverables on Paid Loss Over 90 Days Overdue, Not in Dispute	25	10
Recoverables on Paid Loss Over 120 Days Overdue, Not in Dispute	15	0
Recoverables on Paid Loss, Total	95	30
Amounts in Dispute (included in line above)	1	7
Amounts Received from Reinsurer in Last 90 Days of Statement Year	35	0

a. (2.75 points)

Calculate the company's Schedule F provision for reinsurance.

b. (1 point)

Explain why the company's Schedule F provision for reinsurance is used for statutory accounting and why management's best estimate of uncollectible reinsurance is used for GAAP accounting.

c. (1 point)

At year-end 2010, the company's Schedule F provision for reinsurance was equal to management's best estimate of uncollectible reinsurance. At year-end 2011, the company's Schedule F provision for reinsurance increased while management's best estimate of uncollectible reinsurance remained the same.

Explain two reasons why the divergence in these two measures of reinsurance collectability may not indicate a worsening in the company's reinsurance position.

d. (1 point)

Discuss two major limitations of using the provision for reinsurance as a tool for monitoring the company's solvency.

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20. (6 points)

The following information is provided for a stand-alone U.S. property and casualty insurance company that writes only two lines of business, medical malpractice (MM) and workers' compensation (WC), on a direct basis (all figures are in thousands of dollars).

Line of Business	Direct & Assumed Written Premium				Ceded Written Premium			
	2008	2009	2010	2011	2008	2009	2010	2011
MM	1,000	1,250	1,500	1,800	50	62.5	75	80
WC	500	625	750	900	0	0	0	0
Total	1,500	1,875	2,250	2,700	50	62.5	75	80

- 75% of MM net written premium is written on a claims-made basis.
- 50% of WC net written premium meets the NAIC definition of loss-sensitive contracts.

Risk Based Capital (RBC) input items and values:

	WC	MM
Company 10- year Average Loss and LAE Ratio	87%	72%
Industry 10- year Average Loss and LAE Ratio	80%	74%
Industry Worst Case Loss and LAE Ratio	104%	93%
Adjustment for Investment Income	0.89	0.81

	Total
Company Expense Ratio (All Lines Combined)	27%
2011 Policyholder Surplus (in thousands)	1,000

a. (4.25 points)

Determine the written premium RBC charge (in dollars) after application of the loss-sensitive discount, claims-made discount and premium concentration factor.

b. (0.75 point)

Calculate IRIS Ratio 3 (change in net written premium) and determine whether the result is in the range of usual values.

c. (1 point)

With respect to the treatment of premium, briefly describe two differences between IRIS Ratio 3 and the RBC growth charge.

CONTINUED ON NEXT PAGE

21. (4.25 points)

A property and casualty insurer began operating on January 1, 1995. Since its inception, the insurer has written only claims-made medical malpractice insurance in one state.

Using the information below from the latest two years of the insurer's Five-Year Historical Data page and other portions of its 2011 Annual Statement, answer the questions that follow (all figures in thousands of dollars).

Premium Written	**2011**	**2010**
Gross Premiums Written	45,430	33,759
Net Premiums Written	24,580	22,122
Statement of Income Lines		
Net Premiums Earned	21,280	25,684
Incurred Losses and LAE	13,832	17,799
Other Underwriting Expenses Incurred	5,320	6,549
Net Investment Income Earned	680	560
Realized Capital Gains	1,359	1,119
Other Income	59	68
Dividends to Policyholders	298	268
Federal Income Tax	2,766	3,082
Balance Sheet Lines		
Losses and LAE Reserves	13,002	15,307
Policyholders' Surplus	5,012	7,705

a. (2.25 points)

Calculate the insurer's IRIS Ratio 5 (two-year overall operating ratio) for 2011 and explain how a regulator might respond to the result.

b. (2 points)

Aside from IRIS Ratio 3 (change in net written premium) and IRIS Ratio 5, calculate two additional IRIS ratios for 2011 that can be calculated from the data provided, and explain how a regulator might respond to each ratio.

CONTINUED ON NEXT PAGE

22. (3 points)

  a. (1.5 points)

  Identify three aspects of Solvency II regulation which could be used to improve U.S.-based solvency regulation and briefly explain why each would result in an improvement.

  b. (1.5 points)

  Identify three criticisms of using internal models for Solvency II and briefly explain why each is a concern.

CONTINUED ON NEXT PAGE

23. (1.75 points)

a. (0.75 point)

Briefly explain how reinsurance recoveries on unpaid losses are recorded on the balance sheet under Statutory Accounting Principles (SAP), Generally Accepted Accounting Principles (GAAP) and International Financial Reporting Standards (IFRS).

b. (0.5 point)

Contrast how discounting of loss reserves are treated under SAP and IFRS.

c. (0.5 point)

Contrast how acquisition costs are recorded under SAP and GAAP.

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24. (3 points)

The table below provides four components of a solvency-based regulatory framework, along with options for addressing each:

Component of framework	Options to select from
(1) Regulatory basis	• Principal-based regulation • Rules-based regulation • A combination of the two
(2) Level of regulatory involvement	• Low • High • Somewhere in between
(3) Basis for minimum capital requirement	• RBC • Solvency II • Some combination thereof
(4) Accounting standard	• Statutory • GAAP • IFRS

There is a request for a proposal to develop a new solvency-based regulatory framework.

Write a proposal that addresses each of the four components of the new framework. The proposal should include compelling arguments for the options selected.

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25. (2.5 points)

An actuary analyzed the loss and loss adjustment expense (L&LAE) reserves as of December 31, 2011, for an insurance company. The insurance company management has decided to book a net reserve amount of $117 million and a gross reserve amount of $195 million. Given the following information:

i. The actuary reviewed the reserves both gross and net of reinsurance.

ii. The actuary's actuarial central estimate of the net L&LAE reserves is $125 million. The actuary believes a range of reasonable net L&LAE reserves is $115 million to $165 million.

iii. Discussions with company management indicate that there are no expected problems with collectability for reinsurance.

iv. There is a pending lawsuit against one of the company's general liability insureds for $10 million that is not reflected in the company's reserve or the actuary's estimate. The event triggering the lawsuit occurred in 2010 and there is a significant probability that the company will lose this lawsuit.

v. There is a pending lawsuit against one of the company's general liability insureds for $17,000 that is not reflected in the company's reserve or the actuary's estimate. The event triggering the lawsuit occurred in 2009 and there is a significant probability that the company will lose this lawsuit.

Identify whether or not the actuary should disclose each of the items above in the Statement of Actuarial Opinion for this company and briefly discuss the reason.

CONTINUED ON NEXT PAGE

26. (1.5 points)

a. (0.75 point)

In the context of a Statement of Actuarial Opinion (SAO), construct a scenario where an actuary would issue a qualified opinion and provide the rationale for the qualification.

b. (0.75 point)

The appointed actuary of an insurance company is in the process of creating an SAO. The company currently holds $500 million in loss and LAE reserves. However, the appointed actuary's actuarial central estimate of loss and LAE reserves is $650 million.

Identify and justify the type of opinion the appointed actuary should issue. Include any necessary assumptions.

CONTINUED ON NEXT PAGE

27. (3 points)

Using the following information for three insurance companies (all figures are in thousands of dollars):

	Company A	Company B	Company C
CY 2011 Direct Written Premium	1,500	950	800
CY 2011 Assumed Premium	0	70	30
Projected CY 2012 Direct Written Premium	1,750	850	1,000
Projected CY 2012 Assumed Premium	0	70	20
Year End 2011 Direct Loss & LAE Reserves	1,200	900	850
Year End 2011 Assumed Loss & LAE Reserves	0	50	50
CY 2011 Paid Losses & LAE	600	2,500	450
Projected CY 2012 Paid Losses & LAE	650	750	550
Year End 2011 Surplus	900	2,200	5,000
Projected Year End 2012 Surplus	1,100	2,200	5,500
Estimated cost of Statement of Actuarial Opinion	10	20	20

Determine whether each company would likely be granted an exemption from having to submit a Statement of Actuarial Opinion for Calendar Year 2011 and briefly describe the reason.

CONTINUED ON NEXT PAGE

28. (1.75 points)

An actuary performed a year-end analysis of unpaid claims for the purpose of completing an insurance company's year-end Statement of Actuarial Opinion. Using the following information (all figures are in millions of dollars):

Low end of actuary's range of unpaid loss and LAE	490
High end of actuary's range of unpaid loss and LAE	510
Company's carried reserves	497
Company's policyholders' surplus	150
Company's Total Adjusted Capital	150
Company's authorized control level risk based capital	70
Actuary's materiality standard	15

a. (0.5 point)

Provide a rationale supporting the actuary's materiality standard of $15 million.

b. (0.5 point)

Management believes the materiality standard should be $8 million based on the fact that $8 million would put the company below the actuary's range. Comment on Management's suggested materiality standard of $8 million.

c. (0.75 point)

Propose an alternative materiality standard for the company's Statement of Actuarial Opinion and provide a rationale for why it is better than $15 million.

CONTINUED ON NEXT PAGE

29. (3 points)

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

Five Year Historical Data – One Year Loss Development

Line 73: Development in estimated losses and loss expenses incurred prior to current year

2011	2010	2009	2008	2007	2006
5	3	2	1	(5)	4

Company's Year-End Policyholders' Surplus

2011	2010	2009	2008	2007	2006
30	35	41	38	35	30

The values below are obtained from the opining actuary's analysis as of December 31, 2011 and from the company's December 31, 2011, Annual Statement:

	Actuary's Gross Estimate	Actuary's Net Estimate	Company's Gross Carried	Company's Net Carried
Loss Reserves	100	40	95	40
DCC Reserves	50	20	50	18
A&O Reserves	10	10	8	8
Unearned Premium Reserves for Long Duration Contracts	2	1	3	2

a. (1.5 points)

Construct the table of reserve amounts needed for this Actuarial Opinion Summary.

b. (1.5 points)

Determine whether the opining actuary is required to include an explicit description of the underlying causes of adverse reserve development in this Actuarial Opinion Summary.

CONTINUED ON NEXT PAGE

30. (1.5 points)

An insurance company that writes California homeowners business with a total insured value of $500 million is evaluating several reinsurance contracts to lessen the potential impact on its financial statements from a catastrophic California earthquake event. Two such contracts are detailed below.

- Contract 1: A contract that pays, on December 31, 2013, 95% of all of the Company's California earthquake losses incurred in 2012.

- Contract 2: A quota share that cedes 100% of the company's California homeowners business.

a. (1 point)

Evaluate whether or not each contract above would qualify for reinsurance accounting treatment under statutory accounting.

b. (0.5 point)

For the contract(s) that does not qualify for reinsurance accounting in part a. above, propose a modification that could be made so that the contract(s) qualify for reinsurance accounting treatment under SAP.

CONTINUED ON NEXT PAGE

31. (1.5 points)

An insurer enters into a reinsurance contract to cover its homeowners business with the following terms:

- Estimated subject premium: $20,000,000
- Reinsurance premium: $10,000,000
- Ceding commission: 30%
- Loss ratio cap (maximum loss ratio reinsurer will incur): 100%
- Maintenance fee to avoid automatic commutation in 4 years: $75,000

- Reinsurer's expenses as % of premium:
  - Brokerage: 10%
  - Underwriting: 10%
  - Tax: 2%

a. (1 point)

Identify two terms in the contract above that would cause most concern from a risk transfer perspective and briefly explain the cause for concern.

b. (0.5 point)

In evaluating risk transfer, discuss the type of interest rate to use when discounting cash flows.

END OF EXAMINATION

Exam 6 U.S.

QUESTION		POINT VALUE OF QUESTIONS		(a)	(b)	(c)	(d)	(e)	(f)	(g)	
1		3		1.5	0.5	1					
2		2		1	0.5	0.5					
3		3		0.5	1	1.5					
4		3		2	0.5	0.5					
5		2		1	0.5	0.5					
6		1.5		0.5	1						
7		2.25									
8		1.5		1	0.5						
9		2		0.5	0.5	1					
10		2.25		0.5	0.5	0.5	0.75				
11		3									
12		3		1.5	1.5						
13		3		1.5	0.75	0.75					
14		2.5		1.5	1						
15		3.25		1.5	0.75	0.5	0.5				
16		3.5		1.75	1.75						
17		2.75		1.25	0.5	1					
18		5		4	1						
19		5.75		2.75	1	1	1				
20		6		4.25	0.75	1					
21		4.25		2.25	2						
22		3		1.5	1.5						
23		1.75		0.75	0.5	0.5					
24		3									
25		2.5									
26		1.5		0.75	0.75						
27		3									
28		1.75		0.5	0.5	0.75					
29		3		1.5	1.5						
30		1.5		1	0.5						
31		1.5		1	0.5						
TOTAL		87									

1) **Sample Answer**

Part a.

- PPA coverage is unaffordable since companies file and use. Prior approval - regulators may limit rate increases before they are used
- private passenger auto may be compulsory, so in order to keep coverage affordable for all, a state may want to control rate changes by implementing prior approval
- the insurance is compulsory therefore regulators are using prior approval to prevent insurers from obtaining excessive profits
- Insurers earnings excessive profits - prior approval allows for disapproval of excessive rates
- theinsureds may not be informed and end up choosing the more expensive insurer. The rates controlled by prior approval law can protect insureds from buying expense insurance
- Insolvencies due to inadequate rates - regulator will be able to reject rates that are too low, and restore rates to competitive, healthy levels
- unfair/discriminatory/illegal rate classification - regulator can review the rating characteristic being used
- dramatic rate changes - prior approval will allow regulators to require "phasing in" of large rate increases over time

Part b.

- require insurer to exit all business in the state
- require prior notice
- impose fines
- the state could make some filings PA and others F&U. Example - rate changes over 7% are PA but anything under 7% is File and Use
- speed approval time

- create residual market
- they could go back to file-and-use

Part c.

- PPA buyers are less sophisticated
- Auto is compulsory and thus affordability is a major concern

- PPA rates and classification systems are highly complex
- PPA has very statistical credible class plan (not individualized risks as Commercial GL)

Examiner's Report

Part a. Candidates in general responded well to this part of the question. Few candidates received no credit. The most common reasons for receiving only partial credit were providing fewer than the requested three items, or providing only the requested market conditions, but not including how prior approval would address them.

A broad range of possible conditions were considered acceptable. Common market conditions not accepted (because they were deemed insufficient) were

- Many competitors entering the market (more description required as to why this implies a higher degree of regulatory scrutiny, since in general, competition is favorably regarded)
- Rates are discriminatory (The candidate needed to indicate that rates were UNFAIRLY discriminatory. Discriminatory rating can be legal, fair and appropriate.)

Part b. Candidates also responded well to this part of the question. As the part was only worth 0.5 points (0.25 for each of two requested changes a regulator might make if insurers are leaving the market after a prior approval system is implemented), very little description was required. A broad range of answers was acceptable, including abandoning the prior approval system.

Common incorrect answers included:

- Provide incentives to remain in the market – This was too broad. The question called for specific incentives to be proposed.
- Provide disincentives to leave the market – This was too broad. The question called for specific disincentives to be proposed.
- Create exit barriers – This was too broad. The question called for specific barriers to be mentioned
- Allow the use of rating models or certain underwriting variables – Did not really address the approval system

Part c. – Candidates responded fairly well to this part of the question as well. Some candidates did not provide both a reason and a description/explanation; others did not provide two distinct reasons.

Common incorrect answers included:

1. PPA gets more publicity than CGL – not deemed sufficient. Candidate would need to supplement this with more information as to why it gets publicity/regulatory scrutiny, such as the mandatory nature of the coverage in most instances
2. PPA applies to more people - not deemed sufficient. Candidate would need to supplement this with more information as to why it applies more broadly, such as the mandatory nature of the coverage in most instances

2) Sample Answer

Part a

a. Briefly describe four functions of the National Association of Insurance Commissioners (NAIC).

0.25 point per each valid function. List of functions from reading include:

1. NAIC's fundamental insurance regulatory goals are:
   a. Protect the public interest;
   b. Promote competitive markets;
   c. Facilitate the fair and equitable treatment of insurance consumers;
   d. Promote the reliability, solvency, and financial solidity of insurance institutions;
   e. Support and improve state regulation of insurance.
2. Types of ways NAIC employee's assist regulatory officials:
   a. Develop standards for uniform insurer financial reporting;
   b. Maintain databases to help regulators track insurers' financial solvency;
   c. Scrutinize alien surplus or excess lines insurers seeking to do business in the U.S.;
   d. Support individual state regulators in court cases by issuing "friend of the court" supportive briefs;
   e. Value insurers' securities;
   f. Track insurance issues at the federal level while working on behalf of state regulators;
   g. Help state insurance officials with information about pricing and coverage;
   h. Assist the states in responding to federal reporting requirements;
   i. Produce various publications about insurance issues for state use;
   j. Develop statistical reports dealing with a variety of market matters and interpreting them for regulators;
   k. Give expert advice about financial regulation, market conduct regulation, and computerized applications to state regulators.

Four Main NAIC Purposes / Areas of Operation

3. Develop Model Laws, Regulations, and Guidelines to promote consistency between states.
   a. Help legislative bodies streamline their legislative development process.
   b. Guides States in adopting the same or similar insurance laws, regulations, and guidelines.
4. Grants Financial Accreditation to DOIs
   a. NAIC helps States and the insurance industry operate more efficiently through accreditation progs for DOIs.
   b. NAIC created basic financial regulation standards to improve quality of insurer solvency regulation by DOIs.
5. Conduct Research (Statistics, Insurance Issues, Advice on Pricing and Coverage). Research division assists by:
   a. Giving information to DOIs;

b. Helping DOI staffs with technical and regulatory questions;
c. Giving information to federal and state government agencies and others;
d. Helping develop the NAIC financial and statistical databases;
e. Providing pertinent statistical material and research studies; and
f. Supporting other NAIC departments through research.

Expansion of the Research Division Functions

A. NAIC provides extensive statistical analysis in various areas such as: Quality Monitoring; Routine Reporting; Special Reporting and Model Plans.
    1. Quality Monitoring – works with DOIs regarding monitoring of insurer's filings and data quality.
    2. Routine Reporting – generate routine statistical reports such as, premium and losses ….
    3. Special Reporting – generate reports in response to state insurance regulators, GAO, SEC, etc.
    4. Model Plans – create model statistical reporting plans for the major insurance lines.
B. Insurance Issues
    1. NAIC research division assist DOIs by preparing reports on special subjects for insurance regulators' public comments.
C. Regulatory Advice
    1. Provides assistance on regulatory issues involving pricing and coverage and provides solutions to regulatory problems as well as regulatory coverages.

6. Provides other services through three different offices (SSO, GRO and SVO)
    A. Support and Services Office (SSO) activities include database dev. and maintenance, education and training, financial services, consumer information, publications, electronic communications and legal assistance.
        1. Provides information about the insurance industry's behavior in the marketplace.
            a. RIRS – names of people and insurers against whom regulatory or disciplinary action was taken.
            b. SAD – names of people and insurers of concern to insurance regulators.
            c. CDS – complaints made against insurers and people in the insurance business.
        2. Compiles US domiciled insurers' annual and quarterly financial statements and all special exhibits. Forms basis for insurance regulators solvency checks.
        3. Offers insurance education and training for regulators and in some instances the public.
            a. Ex: "Regulating for Solvency" and "Regulating the Marketplace" training programs.
        4. Gives expert advice to insurance regulators about accounting, reinsurance, and financial reporting to aid in examining insurers' financial condition.
        5. Provides consumer protection through publication of consumer guides on various types of insurance.
    B. Government Relations Office (GRO) handles certain government relations activities for the NAIC.
        1. Present oral and written testimony, conduct research, and assist state insurance officials who appear as witnesses in federal government proceedings.

2. Monitor the financial condition of "nationally significant" insurers and provide professional assistance in the areas of financial regulation and solvency tracking for insurance regulators.

C. Securities Valuation Office (SVO) monitors the quality and value of insurers' investments.

Part b

b. Discuss one reason a state legislator might use to support the adoption of a proposed NAIC model law.

1. Adopting the model law would streamline state processes. Research and drafting has already been done and would not have to be re-created at the state level.
2. It is to the mutual benefit of states when examining multi-state insurers to have consistent laws.
3. Compliance with various state standards/regulations for multi-state insurers is easier and less expensive with uniform standards.
4. Insurers can benefit from legal uniformity among the states on a variety of matters, such as agency and claim adjuster licensing standards, and pricing, coverage, and statistical filing requirements, because of economies of scale.
5. Adopting NAIC model laws may assist DOI accreditation by satisfying NAIC standards for 1) State laws & regulations; 2) regulatory methods; and DOI practices.
   a. Just specifying 'Obtaining DOI accreditation' is not sufficient for full credit; only one element to accreditation.
6. From Wagner p 196: After the NAIC adoption of the model rating laws, state legislatures reacted quickly to prevent federal involvement in insurance.

Part c

c. Discuss one reason a state legislator might use to oppose the adoption of a proposed NAIC model law.

1. Legislator views a particular model law as inappropriate or unnecessary because other state laws sufficiently address the issue.
2. A model law may not meet a given state's specific needs or coordinate well with existing legislation and require modification.
3. Adoption of a particular model insurance law may not be a high enough legislative priority when resources are limited, i.e. legislators might view NAIC model laws as lower priority than other matters.
4. NAIC model laws might not be part of a legislative agenda because of competing interests, other issues, or philosophical objections.
5. Legislators may view the NAIC accreditation program, of which models laws are one element, as a usurpation of their legislative authority.
   a. Adoption of new or revised NAIC model law accreditation requirements creates a continuous need for new legislation.

Examiner's Report

Part a

Most candidates were able to give four brief examples of the many NAIC functions. Candidates did not receive credit when responses were lacking or misstating critical verbs or nouns. This primarily occurred when a candidate had partially or insufficiently memorized the NAIC mission statement. Some candidates also conferred more regulatory authority to the NAIC than what they truly have. Credit was also not given when a candidate repeated a valid function using slightly different wording.

Part b

Many candidates gave sufficiently complete responses to this question. To receive full credit, a candidate needed to provide the rationale for the reason given to support adoption of the model law. Just noting "Adopting model law makes state's regulation more consistent with other states" was not sufficient. The candidate needed to further explain it reduces compliance costs for multi-state insurers operating in state's with similar laws.

Part c

Most candidates were able to list a reason not to adopt a model law. There were occasions where answers were too brief to convey a candidate's sufficient understanding. A common instance would be "The model law is unnecessary." To receive full credit the candidate needed to explain why that would be the case.

3) Sample Answer

Part a

1. Some lines of business like, homeowners insurance are sometimes mandated by lenders to be purchased from highly rated insurers. Also, Insurers who write surety business may be required to maintain a certain rating to write business in certain states.
2. Ratings are important for insurers when selecting reinsurers to which to cede their business in order to ensure they select financially stable reinsurers who will not default.
3. A reinsurer needs a good rating in order to market itself to insurance companies as a financially stable company.
4. Agents are cautious of non-rated insurers
5. Third parties rely on outside sources to assess the financial strength of insurers.
6. Consumers don't have the knowledge to evaluate insurers. They need the help of the rating to select financially strong companies.
7. Investors rely on the ratings for their investment decisions.
8. Insurers financing cost (debt financing) reduces as rating strengthens.
9. A rating helps indicate the financial strength of an insurer and whether it can pay its claims, which would help increase its book of business.
10. Rating agencies are efficient at providing ratings, this saves insurers time, resources and significant expenses rather than them having to try to prove their own financial strength.
11. Insurers use the rating to identify areas of weakness within their company on which they can improve and improve their rating.

Part b

1) AM Best uses additional risk measures not found in RBC formulas like interest rate risk and catastrophe risk
2) While regulators utilize the RBC formula to determine total capital requirements, AM Best utilizes a 1% expected policy holder deficit (EPD) to determine capital needs.
3) RBC uses a worst case scenario approach for all risks, while AM Best uses a 1% EPD ratio for all risks.
4) State regulators mainly use the RBC quantitative formula. AM Best uses qualitative measures along with quantitative numbers (BCAR).
5) AM Best has a higher written premium charge relative to reserving than the RBC formula that state regulators depend on.
6) AM Best uses a higher asset risk in its formula of BCAR than what is used by state regulators in the RBC formula.

Part c

1) On site financial examinations - At least once every five years for full scope examinations. Limited scope examinations occur more frequent.
2) On-Site examinations- understand the company's risks and the ability to mitigate risks.
3) Calculate IRIS ratios that help indicate areas of concern for an insurer such as deficient reserves, high leverage ratios or unprofitable companies.
4) Apply IRIS ratios. If 4 or more of the ratios are out of the reasonable range regulators will monitor these insurers more closely.
5) Review RBS and IRIS ratios to identify companies that might be in financial trouble and prioritize the companies that need a more in-depth review.
6) Use of RBC formula – calculates minimum capital requirements and also keys framework for regulatory action.
7) Perform rehabilitation and liquidation of companies in need of such action.
8) Financial Analysis Working Group (FAWG) monitors solvency of nationally significant insurers to ensure nothing is missed in other monitoring techniques.
9) Require periodic financial reporting using standardized reports (SAP) to regulators.
10) Annual and Quarterly statements provide consistent and comparable reports between insurers and within an insurer over time.
11) Accreditation program which sets a minimum standard that insurers should follow to be accredited (eg laws, regulations, regulatory methods and department personnel) to improve the standards of maintaining financial solvency.

Examiner's Report

Part a.

Most candidates received full credit on this part. However, a common incorrect answer was: "insurers with a higher financial rating can charge higher premiums."

Part b.

Some candidates only provided an answer for AM Best or for the regulator; they did not contrast AM Best and the regulators. Common incorrect answers included "GAAP vs SAP" or "Going concern vs. Liquidation".

Part c.

Some candidates only gave a list type answer and did not fully describe the reasons.

4) **Sample Answer**

Part a

Two triggers for Mandatory Corrective Action:

- Fact finding by regulator indicates policyholders may be at risk
- Poor results on financial examinations
- RBC Ratio is within Regulatory Action Level (100-150 or 50-75)
- RBC Ratio is below Company Action Level
- IRIS ratios show abnormality / fail IRIS ratios
- Insurer's ability to pay claims has deteriorated
- (Close to) Insolvency
- Liabilities are greater than assets
- Company has problems paying claims / obligations
- Insurer experiencing excessive growth
- Reserve inadequacy
- Large Catastrophe Loss
- Insurer Fraud

Two actions for Mandatory Corrective Action:

- Submit a plan to improve financial status
- Suspend or limit dividends to policyholder/stockholders
- Limit or withdraw from specified investments
- Require insurer increase capital / surplus
- Restrictions on writing or renewing business
- Limit renewal of non-guarantee renewable policies
- Require insurer to reduce liabilities
- Require increased reinsurance (reduce liabilities)
- Limit expenses (commission expenses , general expenses)
- Require insurer to document the adequacy of its rates

Two triggers for Administrative Supervision

- Mandatory Corrective Action fails
- Financial Conditions are worse than previous level
- Fact finding by regulator indicates policyholders may be at risk
- Poor results on financial examinations
- RBC Ratio is within Authorized Control Level (70-100 or 35-50)

- RBC Ratio is below Regulatory Action Level
- Failing multiple IRIS ratios
- (Close to) Insolvency
- Liabilities are greater than assets
- Company has problems paying claims / obligations
- Insurer experiencing excessive growth
- Reserve Inadequacy
- Large Catastrophe Loss
- Insurer Fraud

Two Actions for Administrative Supervision

Insurer will need regulator's consent/approval for the following (or regulator may limit/restrict/prohibit):

- Incur new debt/financing
- Issue new or renewal policies
- Renewing policies that are not guaranteed-renewable
- Writing premiums
- Purchase Reinsurance
- Merge with another insurer
- Sell or transfer assets or in-force business
- Change Management
- Changes to Executive / management compensation
- Making certain investments
- Withdrawing or lending funds

PART b

- When company is in financial distress and must surrender the company to the commissioner and they determine the fate of the company (liquidate/rehab). Must access assets and liabilities to determine position as well as reserve adequacy.

- When a receiver is assigned to manage a company's assets and distribute funds for obligations faced. Receiver is a disinterested person assigned to be in charge of a company's receivership.

- Receivership is when a receiver (an unbiased disinterested third party) takes control of an insurer and its assets in attempts to stabilize cash flows.

- Receiver is established to stabilize assets and liabilities leading to either rehabilitation or liquidation.

- When judge declares insurer insolvent, places company in court ordered receivership, in

which regulator designates receiver to assume control and act to safeguard interests of policy holders/taxpayers during rehab and/or liquidation process.

PART c

- Liquidation is when a company cannot rehabilitate and all the assets are sold to make payments for everyone owed. Must follow a certain order in making payments (UEP return is usually last).
- Rehabilitation insurer continues to service policy holders with creditors satisfying claims from future earnings.
- One outcome is liquidation when the assets are sold off to pay off the company's debts.
- Liquidation – all assets are liquidated to pay as many liabilities as possible and company is dissolved.

Examiner's Report

Part a

The most common incorrect answers confused Mandatory Corrective Action with the Mandatory Control Level of the RBC. Mandatory Corrective Action aligns with the Regulatory Action Level, which is not as severe.

Some candidates only provided the triggers, but not the actions that the regulator could take under each of the levels. If a candidate did not read the entire question, they may have missed that they needed to provide actions as well.

Also, many candidates only gave one trigger (instead of two) for each level.

Part b

Many candidates knew that a receivership involved the regulator taking control of the company (or putting it in the hands of a third party). However, some candidates neglected to provide the receiver's goals or obligations.

Part c

The two correct answers were 'rehabilitation' and 'liquidation'. Candidates who failed to get full credit often did not explain these two events sufficiently.

5) Sample Answer

Part a

Clayton ->Identified and made illegal activities that lessened competition or created monopoly power.

Robinson-Patman Act -> Prohibited price discrimination, allowed to deviate from bureau rates if could be supported by reduced operating costs.

Part b

Answer 1

Application of federal anti-trust acts
Insurance regulated by federal government

Answer 2

SEUA decision meant insurance is subject to Clayton and Robinson-Patman Acts since insurance was now considered interstate commerce.

1) Collusion for purposes of setting rates became prohibited
2) Rate discrimination prohibited

Answer 3

Clayton: Companies could no longer join the policies together
Robinson: Couldn't drop prices to drive out competition

Part c

Answer 1

Amended to exclude insurance
Tried to return regulation to state based on public interest

Answer 2

Clayton should be amended to allow cooperation to set rates
R-P should not apply to business of insurance

Answer 3

NAIC recommended that states be given the responsibility and authority to regulate insurance
NAIC began promulgating model laws to create uniformity and consistency in insurance regulation and reporting.

Answer 4

NAIC tried to repeal the decision of the SEUA
When they were denied an appeal, they had McCarran-Ferguson passed, which still gave states power, but these acts would also still apply (assuming state didn't pass its own laws of the same)

Answer 5

Adopt prior approval law
Adopt model law prohibit tying products, price rebate or other activities that could increase monopoly power. Preempt federal anti-trust law apply to insurance

Answer 6
Appeal the case in the Supreme Court but court refused to rehear the case.
Approach congress to amend Clayton Act and amend R-Pat act to exclude insurance

Examiner's Report

Part a.
Candidates who received full credit were able to identify a key distinction between the acts: the fact that Clayton identified actions that lessened competition (where Sherman was more ambiguous). Common mistakes included reversing the two acts or confusing one or the other with the Sherman Act. Some candidates also gave a list of some specific actions that were prohibited by the Clayton Act, without mentioning why or what the specified actions had in common.

Part b.
The most common errors dealt with candidates stating consequences that were too vague.

Part c.
Common incorrect answers included stating that the NAIC encouraged File and Use laws instead of Prior Approval after the SEUA decision. Others confused actions the NAIC took many years later with the actions that were taken following SEUA.

6) Sample Answer

Part a. i) Prohibits actions that create monopoly power

ii) Prohibits boycott, coercion, and intimidation

OR

i) Prohibits collusion to fix prices
ii) Prohibits boycott, coercion, and intimidation

Part b.

1. Paul vs. VA: insurance is ruled not interstate commerce, Sherman act is not applied to insurance

2. After Paul v. VA, insurance was regulated by the states and exempt from the Sherman Act

3. SEUA vs. US: insurance is considered interstate commerce and is subject to Sherman act.

4. After the SEUA case, federal regulation applied to insurance and bureau ratemaking was banned.

5. McCarran-Ferguson Act: returns regulation of insurance to state level and provides limited exemption of anti-trust law to insurance.

Examiner's Report

Part a.
Two key features of the Sherman Anti-Trust Act are:
i. Prohibits collusion in attempts to gain monopoly power
ii. Prohibits activities that restrain trade such as boycott, coercion, and intimidation

The two key points here are the prohibition of companies working together to form trusts or monopolies and the list of activities that were effectively banned due to this prohibition.

Common mistakes on this section included:
1. Applies to interstate commerce
2. It is a federal law
3. It does not allow rating bureaus or ratemaking in concert

Item 1 above was not given credit because this is a limitation of the act, not a key feature. The application of the Sherman Act to particular types of commerce is a key discussion point in part b. of the question.

Item 2 was not given credit because it is a general descriptor of the legislation, not a key feature.

Item 3 was not given credit because the Sherman act does not specifically address rate bureaus or insurance ratemaking. Part b. of this question asks about the varied application of the Sherman Act over time, and a statement that banning rate bureaus is a key feature implies the candidate does not understand that the effect of the Sherman Act on the insurance industry has been affected by judicial decisions and the McCarran-Ferguson Act.

Part b.
Candidates were given credit for describing the effects of the Paul v. Virginia decision, the SEUA v. US decision, or the McCarran-Ferguson Act.

Paul v. Virginia
Paul v. Virginia predates the Sherman Act, but it was acceptable to state that the Sherman Act did not apply to insurance after Paul v. VA, due to its ruling that insurance was not considered interstate commerce. This allowed for state regulation of insurance.

A common mistake that led to partial credit was stating only that the Sherman Act did not apply as a result of Paul v VA without giving the reason (not considered interstate commerce) or describing that the power of regulation stayed with the states as a result.

SEUA v. US
The SEUA v. US case overturned Paul and resulted in the Sherman Act being applied to insurance.

A common mistake that led to partial credit was stating only that the Sherman Act did apply as a result of the SEUA decision without giving the reason (insurance was now considered interstate commerce) or describing that the power of regulation moved to the federal government.

McCarran-Ferguson Act
As a result of the SEUA decision, congress passed the McCarran-Ferguson (MF) act. The act returned regulation of the business of insurance to the states and gave the insurance industry a limited exemption from the Sherman Act. The Sherman Act still applies to the extent that states do not regulate insurance and in cases of boycott, coercion, and intimidation.

Common mistakes included failing to mention that the act returned regulatory power to the state or failing to describe the limitations of the exemption provided by the MF act.

Candidates also described the following as judicial decisions or legislative acts that affected the application of Sherman. These responses were not given credit because they did not directly answer the question as it was asked.

ISO Settlement – Insurance Services Office settled anti-trust allegations with 20 state attorney generals. The result was a restructuring of ISO and the rate guidance ISO offered. This was not given credit because it is neither a judicial decision nor legislative act. As a

result, it is not clear how the settlement would set precedent or alter how the Sherman act applies to insurance more broadly.

Royal Drug – The Royal Drug decision clarified what is defined as the business of insurance that is exempt from the Sherman Act and what actions of an insurance company are still regulated by Sherman. No candidate gave a response that clearly described how this decision affected the application of Sherman. Instead, candidates listed the criteria given in Royal to decide if business is "business of insurance"

Dodd-Frank – The Dodd-Frank act enabled the creation of a Federal Office of Insurance but did not modify the application of Sherman.

7) **Sample Answer**

Answer 1 - Captive

Captives and RRG's share the losses among its members but a surplus lines carrier would transfer the risk.

RRG's and surplus lines don't have guarantee funds but captives do, so captives provided a little more protection.

RRG's and captives probably have lower costs than the surplus lines

I would select a captive because it probably has the best balance between cost and coverage/protection.

Answer 2 – Risk Retention Group

The hospital should join a risk retention group. The advantages are that in can rates will likely be more affordable than a surplus lines company since it is owned by the policy holders. Has incentive to keep rates affordable and also less admin expenses due to lack of marketing and agent fees, so will save over a surplus company. The risk retention group may also be able to operate more effectively that a captive due to less licensing requirements. Captives requiring regulatory approval for each state it operates in while the risk-retention group does not, so costs are further reduced by the reduction in filing costs. Also, captives and surplus lines may write property business with the hospital by benefit from joining a risk retention group who solely writes liability, more specialized.

Answer 3 –Surplus Lines

While each option would work, I would probably recommend purchasing coverage from a surplus lines company. This would provide more options and flexibility.

Risks retention groups (RRG's) do cover a lot of healthcare services and have expertise here; however, you are really just spreading the risk. The hospital would be a member of the RRG and it would be responsible for the costs for all members. If there is a shortfall in funds, hospital would need to supply funding. The hospital still wouldn't be truly protected. Also, you would only be able to get liability coverage. What if later it was decided that they wanted property coverage too?

Captive is similar to RRG's. While you could also get property coverage if desired, like RRG's, the hospital is a member of the captive and responsible for the costs of captive.

Using surplus lines, the hospital would be protected. It would not be exposed to shortage of funds. It would have people with expertise of the field and the ability to respond quickly to changing environments. It would be easier to tailor to their needs. They would be able to expand to property coverage, if desired (and may be able to get a discount for multiple products). Diligent search requirement should be met since problem says "difficulty purchasing with admitted" (but this may not matter with passage of Dodd-Frank).

Additional Justifications or advantages/disadvantages

SL "Purchase from surplus lines have advantage over captives & RRG's of having a licensed broker with extensive knowledge of risk that both RRG's and captive will not have.
SL "Purchase from Surplus lines…. Still face significant solvency regulation, but less invasive than all the regulations of different states that captives deal with."
SL "Surplus lines Company that is licensed usually has higher capacity as they need to meet certain capital requirements before being licensed."
SL "Financially solid insurer could provide more safety; underwriting expertise."

Advantage of SL "may be better capitalized than RRG (Captive), therefore better able to handle large fluctuation in claims." "Assets of owners not at risk if use Surplus line, unlike in RRG, Captive."
RRG "Expense -- a SL company will charge profit, commissions, and potentially higher taxes depending on jurisdictional laws (as will a captive) – RRG insures members, so profits are shared and commissions are nonexistent."
RRG "RRG's view ratemaking in the long-term making rates more stable. A captive might have variable rates because of market or owner pressures. Surplus Lines are also affected by market pressures."
RRG "Although RRG's could not write property lines to diversify its risk as captives and surplus lines could, RRG could provide specialization in a specific liability line to help insured mitigate and control their losses, at the same time developing risk management programs for them."
RRG "The RRG also isn't protected by a guaranty fund, but the hospital knows similar risks are insured by the RRG, so it knows its risk better."

Examiner's Report

There is no right or wrong choice of option (Risk Retention Group, Captive or Surplus Lines), but the choice has to be justified with the correct advantages outweighing the correct disadvantages. As a result, there were many different answers that received partial credit. Below are comments on common incorrect or incomplete answers:

1. The questions asks to select an option; some answers did not include a selection, but just discussed advantages and disadvantages.
2. Some answers only included advantages or disadvantages, but did not provide justification by explaining how the relative advantages of the chosen option outweigh the relative disadvantages compared with other options.
3. Some answers indicated that all choices had similar advantages. This may or may not be correct, but discussing all choices does not provide extra points. Also mentioning an advantage over traditional insurers does not give points, just need to compare against the other 2 options.
4. A number of answers just gave an advantage of buying coverage without saying that the other options do or do not offer this advantage.

5. Some just compared the selected option to one other option, with no mention of the third option. A comparison with the third option was needed, otherwise one could assume the third option has all the same advantages and disadvantages of the chosen option.
6. "None of the options are in the Guaranty Fund." Captive Insurers in the US are eligible for Guaranty Fund Protection if a non-RRG captive, but if an RRG-Captive, then the company is not eligible for GF protection. RRG's and SL's are not eligible for Guaranty Fund.
7. "RRG's charge a premium." A number of answers seem to imply that the members just pay for their own losses. They all pay a premium, there is just a difference in if and how the losses are shared. An advantage listed in the GAO report on page 5 is the stable rates for RRG compared to the open market or SL.
8. "RRG's still have to pay premium tax in non-domiciliary states." SL may pay in domiciliary state with the same amount.
9. A number of answers discuss the problems and/or costs involved in **forming a group captive or RRG -** the company is actually **joining a group captive or RRG** that is already formed, so this is not a justification for not choosing one of these options. In both group captive and RRG, the losses are shared with others in the group; the company is not going on its own.
10. "In Captives, all insureds are owners (Porter pg 2.14 and GAO page 6)." In RRG they are owners also, but some do not contribute to capital, but all share the risk.
11. "It would be difficult for the company to become eligible for Surplus Lines." The question states that the company can go with any of 3 the options, so it's not correct to state that one option is not available. Note after Dodd-Frank the difficulty in being eligible for SL no longer exists.

8) Sample Answer

Part a – Two Arguments In Support.

- The insurer is regulated by only domiciled state.
- Only insured's home state can require licensure of insurer or broker; not subject to licensure requirements from multiple states
- Only the home state can collect premium tax
- Streamlined process of tax collection reduces operating inefficiencies.
- Diligent search requirement removed
- Increased access to the non-admitted market could increase the insurer's revenue potential
- D-F Act allows reinsurers only be regulated by Ins. Commissioner in home state, this lowers administrative costs of reinsurer
- Only have to satisfy requirements of domicile state to get reinsurance credit, provided state is accredited.
- The Act regulates the financial institutions that the insurer has dealings with constantly, heavily. This allows for more confidence in their investments.

Part b – Two Arguments Against.

- Concern the rapid growth in surplus line since it's not covered by guaranty fund
- State regulation is working well – if not broken, do not fix it.
- Federal or joint state & fed. regulation would be costly and would add complexity and additional regulation.
- Since the surplus lines are only requires license by 1 state, the non-domiciliary states may disagree or dislike those conducts that are OK in its domiciliary but not in the state in question.
- Regulator outside of insurer's state of domicile does not have licensing authority so less regulatory control over those doing business in his state
- Reduces premium taxes collected since only home state collects taxes.
- Home state of insured must figure out how to work with other states to distribute taxes. Dodd Frank didn't provide enough guidelines.
- It may be complicated for states to figure out how to share and distribute premium taxes on multi-state risks that are collected by the insured's home state
- Regulator may disagree with insurer's home states determination of reinsurance credit for an insurer doing business in regulator's state
- Puts more pressure on each state to regulate reinsurance adequately, as it's no longer monitored by other states too

Examiner's Report

Many candidates offered a reasonable listing of arguments for and against Dodd-Frank, but in some cases they offered two items that were actually differently-worded versions of one argument. For example, the rapid growth of the non-admitted market and the lack of a guarantee fund to protect the non-admitted policyholders are both regarding the regulator's concern about the greater risk of the non-admitted market. Therefore, this example would only receive credit for half of the response as they are not two distinct arguments.

One additional common mistake was confusing the arguments. For example, some candidates answered that the benefit for the non-admitted carrier seeking reinsurance is that reinsurers now only need to be licensed by their domicile state. This is not a valid argument. Rather, a correct argument would reference either the simplified licensure of non-admitted insurers or brokers or the simplified process for obtaining credit for reinsurance.

9) Sample Answer

Part a

a) Difficulties in assessing the validity of asbestos claims.

- Many claimants in a single lawsuit making it difficult to verify each one
- Use of mass screenings to diagnose claims/High frequency of fraudulent claims/Errors in expert opinions (considered the same answer so only accepted once)
- High cost to assess validity
- Claimants claiming sickness from asbestos worked for many different companies so it is difficult to verify which company is liable
- Cancer could have been caused by smoking rather than asbestos
- Unimpaired claimants with exposure

Part b

b) Factors that cause the asbestos litigation system to become more inefficient

- More defendants involved in litigation and defense is no longer handled on a joint basis
- More defendants have abandoned settlement strategies
- Higher discovery costs because of newer defendants
- Coverage disputes between defendants and their insurers
- Only 41% of total spending reached claimants/high cost of litigation due to fraudulent claims (considered same answer so only accepted once)/high cost to litigation system from unimpaired claimants
- Many errors in expert evidence, especially due to mass screenings
- Venue shopping by claimants overloading courts in jurisdictions with favorable laws for claimants
- Peripherally involved defendants brought into suits due to bankruptcy of more directly liable defendants

Part c

c) Ways in which asbestos litigation might have turned out differently had the Daubert decision occurred before the asbestos crisis.

- Credit given for each of the Daubert factors that judges would consider and the result of applying these factors
- List of factors:
    i. Known or potential error rate
    ii. Whether the evidence has been subject to empirical testing
    iii. Whether it has been subject to peer review and published
    iv. Existence and maintenance of standards and controls concerning its operation
    v. Generally accepted by the scientific community
- List of results of applying the standards:
    i. Expenses would have been higher for each individual claimant

ii. Overall expenses would be lower because there would be fewer claimants
iii. More evidence would be thrown out
iv. More summary judgments would be requested and granted
v. Plaintiffs and their attorneys would be less likely to file claims or would make sure that their evidence met Daubert standards
vi. Lower number of fraudulent claims

- Also accepted - descriptive answers that explained a result of the Daubert decision and the impact that this would have.
  i. Judges would have scrutinized evidence more carefully resulting in a lower number of fraudulent claims or lower claim frequency
  ii. Summary judgments would have been requested more frequently resulting in cases being resolved more quickly and at a lower cost
  iii. Plaintiffs would have tailored the evidence more carefully to be acceptable to the judge reducing the number of cases in litigation

Examiner's Report

Part a

Many candidates confused the validity of a claim (whether or not a reported claim is truly a claim) with the valuation of a claim (what a claim is worth).

Common incorrect responses:

- Non-malignant claimants - There were many papers that discussed "non-malignant" claimants. This was accepted if the candidate also mentioned that the claimants were also unimpaired because asbestosis is not a cancer so these claimants have valid non-malignant claims.

- Long latency period - Discussions about the long latency period or long tail payment pattern of asbestos claims were considered issues of valuation or estimating IBNR, not an issue in assessing validity of claims. However, if a candidate discussed the long latency causing difficulty in assigning liability to the correct party or correct insurance company, then latency would be accepted as a difficulty in assessing validity of claims.

- Long tail payment pattern – also an issue of valuation/IBNR

Part b

Many causes of inefficiency were accepted. The rapid depletion of funds was not accepted because it was considered the result of the claims process rather than inefficiency in its own right. Increased cost of litigation/high litigation costs was considered too vague to receive full credit.

Part c

The original expectation was that candidate answers would list the Daubert factors and describe how applying two of these factors earlier would have changed the course of asbestos litigation. Since the question did not mention the word "factor", answers were accepted that described a result of the Daubert decision and the effect this had on the claims process. Credit was not given to answers which talked only about costs increasing or decreasing without any explanation of how or why this would have resulted from the Daubert decision. The most frequent error on this part of the question was giving the same answer twice.

10) Sample Answer

Answer 1

A) achieves a reasonable degree of actuarial equity in that there is no means test for benefits and benefits tied to length of employment and wages and higher wage earners get more benefits.
B) achieves reasonable degree of social equity because benefits formula is skewed towards lower income individuals and you're guaranteed benefits as long as you worked for certain period of time
C) Compulsory – so all must contribute; expected to continue indefinitely.
D) In the short term, there won't be much of an input (except possible survivor, child benefits). When this group reaches working age it will help solvency because larger pool of people paying taxes. When these people retire, could put stress on solvency because large group needs benefits.

Answer 2

A) It achieves it somewhat – the more money you make over a lifetime the more benefit you get (to a degree). However, the program is currently in deficit and technically, individuals are not paying their own costs but rather the costs of the prior generation, which goes against the concept of individual risk transfer to a degree.
B) It achieves a great degree of social equity. People who make less money get a higher portion of their average monthly income returned in benefits. The benefit formula is also skewed toward the elderly, large families, and the disabled.
C) The program is compulsory, so there will always be new entrants to pay for costs; the government can tax and borrow if the program runs into trouble.
D) Short term

> The increase in birth rates means that when this generation enters the work force, social security should see something of a surplus since there are more paying in and less taking out; so solvency is improved.

Long term

> When this cohort retires, the generation after it will have a harder time paying for it since there is less coming in and more coming out (solvency decreases). Once the cohort passes on, it is hard to say whether or not the effect will have been positive or negative in terms of solvency, but judging by the current baby boomer situation, it will probably lower solvency overall.

Answer 3

A) Benefits received are loosely related to wages earned and length of working career. The benefits are very much skewed toward lower income, however.
B) Because the benefit plan favors lower income (i.e. they receive a higher return on tax paid), it promotes social equity and the goal of a minimum income floor.
C) It is expected to go on indefinitely with new participants joining. If program has shortfalls, it can be funded through general revenue of federal govt.
D) As an example, the baby boom represented a temporary birthrate increase (compared to today). For short term this created many new tax payers and the SS trust fund was able to build sizeable reserves. For long term as baby boomers retire and begin to draw benefits, there are now less payers than takers. Long term solvency is in doubt because of this demographic shift,

increase in benefits, longer life spans and the fact that trust fund assets have been "borrowed" for other spending.

Examiner's Report

General comments:

- Most candidates scored well on Part B and Part C and received at least partial credit for Part D but struggled with Part A.
- Many candidates demonstrated knowledge of the syllabus material but did not directly answer the questions asked (especially for Part A and Part B).

Part A

- Solution:
    - Actuarial equity is the calculation of rates based on factors related to risk.
        - SS benefits are calculated based on career earnings (actuarially equitable).
        - SS does not charge different rates by risk factors such as age, health, and family history (not actuarially equitable).
        - SS replaces a higher % of pre-retirement earnings for lower paid workers than higher paid workers (not actuarially equitable).
        - Participants have an "earned right" to benefits regardless of need (actuarially equitable).
    - Full credit was given for two brief discussion points or one more fully discussed point.
- Many candidates incorrectly assumed actuarial equity meant solvency.
- Many candidates answered this as "list reasons that SS achieves actuarial equity" and failed to discuss the meaning of actuarial equity or the extent that SS achieves it. Some candidates successfully answered the question by focusing on ways that actuarial equity was not achieved, so stating whether a given idea favored actuarial equity or not was critical to gaining points.

Part B

- Solution:
    - Social equity is providing benefits to the public in response to a far-reaching need or cause of loss.
        - SS provides a floor of benefits to all beneficiaries (socially equitable).
        - SS subsidizes certain groups more in need such as low-income and less healthy workers (socially equitable).
        - SS is a compulsory program and encompasses almost everyone which avoids adverse selection (socially equitable).

    - Full credit was given for two brief discussion points or one more fully discussed point.
- A common error was when a candidate assumed perfect social equity is achieved if everyone receives equal benefits.
- Similar to Part A, many candidates answered this as “list reasons that SS achieves social equity” and failed to discuss the meaning of social equity or the extent that SS achieves it.

Part C

- Solution:
    - Full credit was given for any two of the below reasons
        1. The program is expected to operate indefinitely and not terminate in the future.
        2. Because the program is compulsory, new entrants into the workforce will always pay taxes to support the program.
        3. If the program has financial problems, the federal government can use its taxing and borrowing powers to raise additional revenue.
- Most candidates answered this part well.
- A few candidates received partial credit if they listed versions of reasons #1 and #2 but did not clearly distinguish the two reasons. For example, “SS will operate indefinitely and new entrants will pay into the system” would receive partial credit.

Part D

- Solution:
    - Many varying answers received full credit for this part.
    - In general, answers that received full credit included a detailed discussion of two of the below parts or a briefer discussion of all three points.
        1. In 0-20 years, there will be little to no impact on solvency as a slight increase in auxiliary benefits is paid out to dependents.
        2. In 20-70 years, as the cohort enters the workforce, funds going into SS will increase, as a the workforce will be relatively larger than the beneficiaries. This will either build the trust fund (surplus) or will help pay current baby boomers’ retirement if assuming current conditions of SS. Solvency will be improved.
        3. In 70+ years, as the cohort retires, there will be a smaller ratio of taxes paid in to benefits paid out compared to #2. If funds were not properly managed there will be a significant drawdown in the fund. Solvency will worsen relative to the time period of #2. If SS is properly managed, the temporary birth rate increase should have no long term impact as the cohort paid more in and collected more out. (Since the question mentioned “birthrate” and not “number of births”, it is also acceptable to assume that birthrate returning to normal levels would mean that in the long term the worker to beneficiary

ratio would return to historic levels and the solvency improvement would #2 would not be counteracted in the long term.)

    - Assumptions did not need to be explicitly stated if they were clearly implied in the candidate’s answer.

- Many candidates failed to discuss solvency at all and instead listed ways to improve SS solvency which is not relevant to the question. It is important to read the question and directly answer it.
- Another common error was to omit a discussion of why the stated impacts on solvency would occur. It was not enough to simply state what might happen to solvency with no support.

11) Sample Answer

Answer 1

- Competitive state funds:
  - Profitability – in order to ensure affordability of WC insurance to the public, the government might need to lower its price to compete with private insurer. Hence, the government will not earn much profit in this model.
  - Expense load – lower for government as compared to private insurers. Government can save costs from marketing and commissions.
  - Availability – affordable WC insurance will be available to employers.
- Partner with private insurers:
  - Profitability – government is not likely to gain any profits. It will subsidize the private insurers so they can charge equitable rates while earning normal level of profit.
  - Expense load – will be the same for private insurers as they still need to market and pay commissions.
  - Availability – with assistance from government, it enhances the availability of WC insurance.
- Exclusive state funds:
  - Profitability – government will have lower rates in order to enhance affordability to all. Hence, profit load will not be the main concern of the government, hence likely to be lower.
  - Expense load – expense savings from marketing and commissions
  - Availability – it will always be available since it is provided by the government.
- Therefore the most economically efficient model is competitive state funds because:
  - Despite reduction in profitability, private insurers can still offer the coverage with some profit load with the competition from the government
  - Expense savings for the government competitive funds
  - Affordable insurance with great availability

Answer 2

- Exclusive state funds are the most economically efficient. They do not have to spend money on advertising or most other acquisition costs like private companies would if they had to compete w/private insurers. Partnerships with the insurers would still have the expense of the administration of the relationship w/private insurers. While in all three models the state fund wouldn't have to worry about earning a profit (or loading rates w/a profit load), if partnering w/private insurers or being in competition w/them they would have to worry about adverse selection hurting profitability since private companies might "cherry-pick" the low risk insured leaving the state fund with only poor/high-risk policies. An exclusive state fund would insure all policies including both the high and the low risk exposures.
- While all three models would help ensure availability of coverage, the exclusive state fund would be the most stable because with the other two models the availability can still be impacted by private insurers loosening or tightening underwriting or possibly deciding to exit the market.

Answer 3

- Competitive state funds – decrease expense load due to lack of commissions, availability in public and private sector, profitability may decline if private insurers marketing strategies attract all the lower risks therefore state fund may retain more of the high risks.
- Partner w/private insurers – likely increased expense load due to having to pay commission, admin or agent fees to insurers. Can also decrease profitability since shared and increased expenses, however, a more actuarially sound price can be charged due to no need to compete. Availability is achieved.
- Exclusive state funds – this would be the most economically efficient model. Decreased expenses due to no marketing commissions or agents fees. Greater profitability since adverse selection does not exist as in a competitive market and state can make available so availability is achieved.

Answer 4

- Profitability
    - Competitive fund – may have highest profitability since under competition, the rate can fully affect the risk.
    - Partner – may have lower profitability than "competitive fund" since private insurers normally accept good risk but not bad risk, while the rate can generally reflect the risk.
    - Exclusive state fund – may have the lowest profitability since it achieves social equity more than actuarial equity, so the rate cannot reflect the risk fully.
- Expense load
    - Exclusive state fund – may have lowest expense load since no commission and other acquisition expense is needed.
    - Partner – may have higher expense than exclusive state fund since it needs resources to coordinate with private insurer to obtain business
    - Competitive fund – may have highest expense load since it has to obtain business with competitive insurers.
- Availability of coverage
    - Exclusive state fund – have the broadest availability since everyone can only obtain insurance from it.
    - Partner – have narrower availability since private insurer normally would not share the insurance of good risk.
    - Competitive fund – have narrowest availability since only bad risk will obtain insurance from it as no private insurer is willing to offer coverage.
- The most economically efficient model will be "partner with private insurer" since:
    - While the profitability may be highest it allows competition of private insurer on good risk, while also allowed bad risk to obtain coverage.
    - While the expense is not the lowest it achieves social equity
    - While the availability of coverage is not the broadest, in terms of the whole society, most risks could obtain insurance.

Examiner's Report

Common themes for candidates to consider:

- Ensure that you're answering the entire question. The question asks that the candidate include a comparison for each model. For example, some candidates selected a model and

justified their selection but did not include a comparison for each model. They only included characteristics for their selection, not a comparison against the two models that they did not select.

- Directly answer the question. Some candidates described the circumstances under which each model may be put in place, rather than selecting the most economically efficient model and describing/comparing its characteristics.
- Fully justify. In making a comparison, the candidate needs to explain why something may be the case. For example, simply stating that the expense load for an Exclusive state fund is lower than that for a Competitive state fund does not explain why that may be true. A more complete response would be that the expense load for an Exclusive state fund may be lower than a Competitive state fund since the Exclusive may have lower acquisition expenses (less/no commission and marketing).
- Best government model. Some candidates elected to describe why the private market was more efficient than the government. While one could argue whether that is true or not, this is not what is being asked in the question. The question asked the student to select the most economically efficient model for the three different models for the government's involvement in a workers' compensation state fund, not to compare the efficiency of a government state fund to that of a private insurer or the private insurance market.

12) Sample Answer

Need unmet by private insurers

- **Terrorism Insurance**
  - Part A- Terrorism risk insurance program was designed to fill an unmet need. After 9/11 it was evident that private insurance companies may not have the capacity to provide terrorism insurance. Therefore government stepped in to fulfill this need.
  - Part B- The terrorism risk insurance program, even though it fulfills an unmet need, it is not effective since the demand is not as large as expected. It may be feasible for private insurers to provide this insurance backed by CAT bonds.
- **Unemployment Insurance**
  - Part A- unemployment insurance – due to the catastrophic nature of coverage it was considered uninsurable by private insurance. This therefore fills an unmet need.
  - Part B- unemployment insurance has provided temporary financial assistance but only replaces about 1/3 of income and only about 2/3 apply.
- **Fair PLANS**
  - Part A- FAIR plans – provide unmet need by providing coverage on higher risk properties that were considered uninsurable by private market.
  - Part B- Effective – partners w/private insurers and fills unmet need in market; higher costs shared by all insurers in state.
- **NFIP**
  - Part A- National flood insurance program – provides insurance in catastrophe prone area that private market hesitates to cover.
  - Part B- the NFIP covers high risk properties, but often must borrow from the treasury to do so. It will need to change more adequate rates and increase participation to lower costs moving forward.

Compel people to buy a particular type of insurance

- **Workers' Compensation**
  - Part A- WC funds: since WC insurance is compulsory, state WC funds help to address both affordability and availability issues
  - Part B- WC funds are effective. However, private insurers are able to provide WC insurance with as much expertise and efficiency. Government involvement is definitely effective in markets where there is an exclusive WC state fund; since the alternative private option may have had availability/affordability issues.
- **NFIP**
- NFIP – flood insurance
  - This is required by people who have federally backed mortgage loans and live in flood zones. It is available to communities who meet certain regulations standards and offer protection to homeowners that were not offered in insurance market.
  - Not particularly effective – a large proportion of houses are not insured even though mandated by law. Government actually ends up paying disaster relief anyways which leads to large losses.

- **Residual AL**
    - Part A- Residual auto market – auto insurance is mandatory, but high risk drivers may not be able to get coverage from private insurers, so residual market is created to address availability and affordability issues.
    - Part B- The program enables high-risk drivers to obtain insurance who may otherwise go without, so this is good for society. Also insurers share the prem and loss which seems to be a fair way to address the problem.

Collateral social purpose

- **National Flood Insurance Program**
    - Part A- Flood insurance achieves a collateral social purpose by enforcing building codes and limiting new construction in flood zones.
    - Part B- While mostly ineffective due to the rates being not actuarially sound and lack participation, the social purpose is partially achieved since communities adopt flood plain management plans and provide funds to mitigate before flood damage.
- **Social Security (OASDI)**
    - Part A- create a minimum savings for retirement and healthcare for all qualified workers, comprising of most of all workers.
    - Part B- effective in creating savings for all participants. Criticism exists in that it is currently underfunded for a long-term view and needs to be tweaked. However, provides a mix of individual equity and social adequacy, while promoting earned right and universality.
- **Unemployment Insurance**
    - Part A- Unemployment Insurance is a government funded program used to help certain people who lose their job due to no fault of their own but as a result of economic recession
    - Part B- Unemployment insurance is effective because currently it provides millions with income they would not otherwise be able to have. It might not be as efficient as we would like considering it only replaces 1/3 of the wages, prolongs unemployment and only 2/3 of eligible people can collect.
- **TRIA**
    - Part A- government provides terrorism insurance so that there is no market disruption when a catastrophic attack occurs (esp. for certain industries like airlines).
    - Part B- also moderate program; has been used to alleviate terrorism risks, but participation lower than originally expected.
- **WC**
    - Part A- employers are legally required to provide workers compensation. This is a positive externality because it encourages injury prevention and safety practices while containing the costs of coverage
    - Part B- Program is effective, injured workers are compensated without the need to sue due to no-fault law. Coverage is available at a reasonable cost and residual market is very small.

Examiner's Report

Many candidates offered a reasonable listing for question A. However there were two common ways to lose credit. First, an acceptable program was mentioned but the program's description didn't provide adequate detail on why it was created to achieve a certain goal. Second, certain programs were not accepted for many goals for example, social security and unemployment were not accepted for goal II because the insured is normally not the buyer for these products and has little or no say as to whether those coverages are purchased.

For question B, we were looking for a good half point thought out answer to pair with their response in A. Some candidates did not receive credit for B because their evaluation of the effectiveness was the same as their answer in A which didn't demonstrate mastery of the material. In addition, some answers received partial credit for mentioning a correct point, but not enough for a full credit answer.

The graders looked at each part A and B together for each program so points that received credit for A that were mentioned in their answer for B were accepted and vice versa. Some candidates even combined A and B for each program into a few sentences. The majority of candidates received over half of the credit for this question.

13) Sample Answer

Part A
Answer1

- I) In AIP drivers apply to plan and assigned to insurer based on voluntary market share. In JUA drivers apply to insurer; insurer forwards application to JUA.
- II) In AIP rates are set by regulators and uniform. In JUA, rates are set based on pool experience and uniform.
- III) In AIP, insurer retains the profits/losses. In JUA, profits/losses shared among participants based on voluntary market share.

Part B
Answer 1
JUA – the rates would be set by JUA, so they could probably be highest and more responsive to experience. This increases revenues and chance of making profit. The risk could be stored by all insurers, unlike an AIP which would make insurer solely responsible for profit/loss; this increases risk.

Answer 2
This insurer would favor a reinsurance facility because it can retain all the profits from its low risk drivers and it can still choose whether to accept high risk drivers. If it does accept high risks it can always code them to the facility.

Answer 3
RF would not be preferred because it would use insurer's inadequate rates. AIP would not be preferred because insurer may not have experience handling high risk policies and claims handling and would be required to do so under AIP; would prefer a JUA.

Part C
Answer 1
RF – the insurers could elect to retain the best of the high risk insured's and make a profit because of their better than average claims practices and expenses. Those insured's who would still be unprofitable can be ceded to the RF. In essence the insurance company could leverage adverse selection to maximize results.

Answer 2
Insurer will prefer AIP because:

- It retains the loss/profit; good claim handling practice that reduces average payment per claim and low claim handling expense benefit the insure itself.
- It has large market share, so would probably not interested in losses shared based on voluntary market share.

Answer 3
The insurer would prefer a JUA and would prefer to be the main service carrier for it. With lower claims handling expenses they can handle the high risk claims cheaper than other carriers. The JUA also has the advantage of charging high risk rates based on the pool

experience, so the low risks will not have to subsidize the high risks as much as they do in other programs.

Examiner's Report

Part A asked to compare AIPs and JUAs. A number of candidates also included the characteristics of RFs.

Another common mistake in Part A was that the question asked "How drivers are assigned to an insurer" and for AIP a number of candidates did not write that they are assigned by market share.

Part B & C a number of candidates lost points by not tying the answer back to the situation mentioned in the question. In Part B, several candidates mentioned that a low average premium implies a lower market share. A low average premium is not a function of market share. When candidates said this they were not able to receive full credit for the question.

14) Sample Answer

<u>Part a – Option 1:</u>
Model Solution 1 - Increase in unrealized capital gains would increase the surplus. Increase in net deferred taxes due to increase in unrealized gains would decrease surplus.

Model Solution 2 - Surplus Increases: Unrealized Capital Gains increase - increases surplus, deferred tax liability increase - decreases surplus

Model Solution 3 - Surplus Increases: Market Value of stocks increase - increases surplus, deferred tax liability increase - decreases surplus

<u>Part a – Option 2:</u>
Model Solution 1 - Increase in realized gains increases surplus. Payment of taxes on realized gains decreases surplus. Increase in non-admitted asset value from purchase of office furniture decreases surplus.

Model Solution 2 – Surplus Decreases: Capital Gains increase - increases surplus, Taxes increase - decreases surplus, Non-Admitted assets increase - decreases surplus

Model Solution 3 – Surplus Decreases: Investment Gain net of taxes increase - increases surplus, Non-Admitted assets increase - decreases surplus

Model Solution 4 – Surplus Increases: Capital Gains increase - increases surplus, Taxes increase - decreases surplus, EDP is admitted - no change in surplus

Model Solution 5 – Surplus Increases: Investment Gain net of taxes increase - increases surplus, EDP is admitted - no change in surplus

Model Solution 6 – Surplus Decreases: Capital Gains increase - increases surplus, Taxes increase - decreases surplus, Expenses increase - decreases surplus

Model Solution 7 – Surplus Decreases: Investment Gain net of taxes increase - increases surplus, Expenses increase - decreases surplus

<u>Part a – Option 3:</u>
Model Solution 1 - Increase in realized gains increases surplus. Payment of taxes on realized gains decreases surplus. Payment of stockholder dividends decreases surplus.

Model Solution 2: Surplus Decreases: Capital Gains increase - increases surplus, Taxes increase - decreases surplus, Dividends decrease surplus

Model Solution 3: Investment Gain net of taxes increase - increases surplus, Dividends decrease surplus

<u>Part b – The following reasons were given credit</u>

- Re-invest the current year's gains more heavily in investment-grade bonds, rather than in stocks. In the RBC calculation, common stock carries a 15% charge while bonds of NAIC Class 1-5

carry lower charges. However, this will potentially lower the investment return, so the company will need to assess the impact to investment return of making this shift

- Move from common stocks to investment grade bonds. Investment grade bonds have a lower RBC charge than common stocks.
- Move from common stocks to bonds (1-5). Bonds (1-5) have a lower RBC charge than common stocks.
- Move from junk bonds or bond class 6 to bonds (1-5). Bonds (1-5) have a lower RBC charge than class 6.
- Depending on the market, diversify the portfolio by purchasing real estate rather than common stock (or NAIC Class 6 bonds). The RBC asset charge for real estate is 10%. Since this charge is less than the 15% for common stock and 30% for Class 6 bonds, if the company feels the real estate investment will yield returns that it is comfortable with, this will lower the asset RBC charge.
- Diversify the bond portfolio / purchase more bonds. As long as the bonds being added to the portfolio are from new issuers (relative to the current portfolio) and are not US Government bonds or bonds of subsidiaries/affiliates/parents, this will decrease the "bond size adjustment" factor which amplifies the asset charge for bonds.
- Diversify bonds to reduce the bond size adjustment factor.
- Invest in preferred stock rather than common stock. The charges for preferred stock vary by NAIC Class but most classes of preferred stock carry a lower charge than the 15% common stock charge.
- Move from common stocks to preferred stocks. Preferred stocks have a lower RBC charge than common stocks.
- Decrease holdings in top 10 issuers to reduce the asset concentration factor.
- Move from junk bonds or bond class 6 to common stock. Common Stock has a lower RBC charge than class 6.
- Move the investments in common stock to preferred stock. These have a much lower charge than common stock (15%) because they are less likely to default.
- Shift from common stock to bonds rated investment grade (or really any besides class 6 because C6 charge = 30%, stocks = 15%).
- Shift from common stock to preferred stock, again as long as investment grade because charge is < 15%.
- Purchase bonds from more issuers to lower bond size adjustment factor.
- They can reduce the amount of stocks and bonds they have in their 10 largest holders. This will reduce the asset concentration factor.
- Moving from class 6 to bonds to stocks will reduce RBC (lower %) and generally have higher yield.

Examiner's Report

Part a:

Most candidates lost significant credit for ignoring the impact of taxes (deferred in option 1) on surplus. Another common error was to discuss the reductions in surplus for options 2 and 3 without mentioning the initial increase because of the capital gains. Some candidates assumed after-tax

proceeds were being used to buy office equipment or pay dividends. This results in no change for options 2 and 3. No points were deducted for this assumption.

Part b:

Candidates were typically successful at presenting two changes to reduce the asset risk charges but often did not present a reason. A change that would reduce the asset risk charges and why the change would improve RBC was necessary for full credit. No credit was given to changes that would not reduce the RBC charge. Half-credit was possible for changes that would reduce the RBC charge and also reduce investment income. One common example was convert stocks to cash because RBC charge is lower for cash. Some candidates lost credit for stating buy more bonds because RBC is lower without stating what asset RBC's charge was being compared with.

Another common mistake was "diversify holdings to reduce the factor". For the bond size adjustment factor, it was necessary to state the factor name for full credit. The asset concentration factor is only reduced if the top 10 holdings are reduced, diversification alone is not enough.

<u>Question 15</u>

Part A:

<u>Model Solution 1:</u>

Loss: 300K + 450K = 750K

LAE: 15K + 70K = 85K

Premium: 500K + 50K = 550K

<u>Model Solution 2:</u>

-Loss and LAE reserve affected under commutation = 300 + 450 + 15 + 70 = 835K

-Amount received from reinsurer for commutation = 500 + 50 = 550K

<u>Model Solution 3:</u>

Consideration received - $550,000

Loss reassumed - $750,000

LAE reassumed - $85,000

<u>Model Solution 4:</u>

Assumption: Disability claim → Discounting is allowed

1. Loss incurred: 200,000 + 300,000 = 500,000
2. LAE incurred: 10,000 + 40,000 = 50,000
3. Premiums earned: 500,000 + 50,000 = 550,000

<u>Examiner's Report</u>

Candidates performed well on this part. The most common mistake was omitting a reference to LAE reserves.

The next most common mistake included disclosures around discounting, including disclosing discounted reserves, the amount of discount, or the discount rate used. These disclosures are not required. However, candidates could receive credit for disclosing the present value of the loss &LAE

reserves if they clearly stated assumptions about the permissibility of discounting due to the claims being permanent total disability claims.

Another common mistake candidates made was not being able to identify the payment received from the reinsurer as premium. These candidates often identified premium as a required disclosure, but did not calculate the appropriate amount from the facts in the problem.

Other common mistakes included disclosing the date of the commutation or the line of business affected, which are useful, but not required disclosures.

Part B:

Model Solution 1:

Reinsurance recoverables are removed.

Premium received will be recorded as negative paid loss.

Gain/loss is recorded as "U/W Income" in the income statement.

Model Solution 2:

Balance sheet:

Reserve increases 835K

Assets increases 550K

Income Statement:

Subsequent gain/loss would be reported as underwriting gain/loss.

Model Solution 3:

Income statement: records amount received as negative paid loss. Reserve is increased as recoverable no longer exists. Thus income decreased by 835K – 550K = 285K. Gain/loss would flow into U/W Income.

Balance Sheet: Reserves are increased by 750K + 85K = 835K. Cash increases by 550K

<u>*Model Solution 4:*</u>

[Continued from Part A Model Solution 4, where discounting assumption was clearly stated.]

Treat 550K premium as negative paid loss and increase cash (an asset)

Increase incurred loss by 500,000 and increase LAE by 50,000

Total U/W Gain = 550,000 – 500,000 – 50,000 = 0 (so no underwriting income impact on income statement)

<u>**Examiner's Report**</u>

The majority of candidates did not receive full credit on this part. The most common error was related to where the subsequent gain or loss would be seen in the Income Statement. Many candidates seemed to confuse this commutation with a retroactive reinsurance transaction. Common incorrect answers included "Other Income" or "Special Surplus" as opposed to "U/W Income".

Many candidates also made directional errors, citing that reserves should be decreased, cash should decrease, or the premium received should be added to paid loss.

Another common mistake was simply erroneously identifying where the transactions would occur. Some of these incorrect locations include "write-in liability," "commutation assumed," and "gain/loss from reinsurance transactions."

<u>*Part C:*</u>

<u>*Model Solution 1:*</u>

Assets increase by 550K

Loss & LAE liabilities increase by 835K

Surplus decrease of 285K

Model Solution 2:

835 – 550 = 285K reduction

Model Solution 3:

Record amount received as negative paid loss. Reserve is increased as recoverable no longer exists. Thus income decreased by 835K – 550K = 285K.

Model Solution 4:

[Continued from Part A Model Solution 4, where discounting assumption was clearly stated.]

Cash increased by 550K (asset)

Reserve increased by 550K (liability)

Net impact = 0

Examiner's Report

Candidates performed very well on this portion. If they used the correct numbers from their answers in Parts A or B (if provided), they were likely receive full credit.

The most common mistake was reversing the sign of the impact to surplus. Many candidates calculated the correct impact, but said that the transaction would increase surplus.

Another common mistake was candidates who did not make their assumptions clear but calculated a zero impact to surplus using discounted reserves. In order to receive full credit, candidates needed to either recognize that undiscounted reserve amounts should be used or clearly state their assumptions about the permissibility of discounting.

Some candidates also neglected to quantify the impact, and instead only mentioned that the commutation would decrease surplus. To get full credit, the numeric impact to surplus had to be calculated.

Part D:

Model Solution 1:

Can change the ceding company's future net exposure

Large commutations can cause significant distortions in the balance sheet & income statement

Model Solution 2:

Commutations may indicate that the ceding company needs cash to fund other obligations.

Commutations may impact the ceding company's reinsurance collectability.

Model Solution 3:

1. Large commutations can significantly impact parts of the annual statement (e.g. Schedule P), IRIS ratios, and RBC charges.
2. The commutation may have implications for the insurer's solvency, as they are now responsible for additional claims.

Model Solution 4:

Commutation might change insurer's net risk exposure since company now reassumes some tail risk.

May use a sham commutation to hide distress; may be looking for artificial surplus aid.

Examiner's Report

Candidates generally performed very well on this part of the question. Candidates seemed to be very apt at identifying reasons that regulators would be interested in commutation-related disclosures, and as a result a wide range of intelligent answers were given.

One common mistake was listing a reason related to discounted reserves or the discount rate, which are not required disclosures.

Another common mistake included listing items related to the tax implications of the commutation. Without additional information, the relevance of tax implications to regulators was not clear and did not receive credit.

Some candidates also stated that regulators would be interested in making sure the commutation was not sham reinsurance. Given that a commutation effectively extinguishes all reinsurer liability, this answer did not receive credit.

16) Sample Answer

Answer 1

A) long duration contract

UEPR 2010 27209

UEPR 2011 21000

EP = 97000 – (21000 – 27209) = 103209

103209 – 84000 – 20500 + 2500 + 4000 (assume it is net of tax) – 2750 (assume div. to Policyholders included here) = 2459

B) 50000 + 2459 – (11500 – 13000) – (9700 – 9100) + (9000 – 8000) – (190 – 125) – 200 = 54094

Answer 2

A) for contract A (long duration contract) UEPR should be no less than greatest of test 1, 2 & 3

12/31/2010 UEPR = 27209

12/31/2011 UEPR = 21000

EP = 27209 – 21000 = 6209

Net income = 6209 + 97000 – 84000 – 20500 + 2500 + 4000 - 100 - 2750 = 2359

B) PHS = prior PHS + net income + direct credit to PHS – direct charge to PHS

= 50000 + 2359 – 200 + (9000 – 8000) – (11500 – 13000) – (9700 – 9100) – (190 – 125)

=53994

Answer 3

A) net income = earned prem (ex-contract A) 97000

- Inc loss + LAE -84000
- Inc UW Expense -20500
- \+ Net II earned + 2500
- \+ realized cap gains + 4000
- \- Policyholder dividends - 100
- \- Other loss -2750
- \+ contract A EP + 6209

Net income = 2359

Contract A EP = $WP_{2011} - \Delta UEPR$

= 0 – (21000 – 27209) = 6209

B) ΔPHS = net income 2359

- \+ Δunrealized cap gains +(9000 – 8000)
- − Shareholder dividends - 200
- − Δnon-admitted assets - (11500 – 13000)
- − Δprovision for reins - (9700 – 9100)
- − Δ net deferred tax - (190 – 125)

ΔPHS = 3994

PHS = Prior PHS + ΔPHS = 50000 + 3994 = 53994

$$PHS_{2011} = 50000 + 3994 = 53994$$

Answer 4

A) U/W Inc = 97000 – 84000 – 20500 = -7500

Net Income (excl EP for Contract A) = U/W In + 2500 + 4000 – 2750 = -3750

(Assume that the other income includes Div to policyholders)

Contract A EP = 0 – change in UEPR

$$UEPR_{2011} = \max(21000; 20690; 19150) = 21000$$

$$UEPR_{2010} = 27209$$

EP = 27209 – 21000 = 6209

Thus net income = (6209 – 3750) x 1000 = 2,459,000

B) PHS =

Net Income	2459
+Δunrealized cap gains	+ (9000-8000)
-Δnon-adm asset	-(11500-13000)
-Δprov	-(9700-9100)
-ΔDTL	-(190-125)
+prior year PHS	+ 50000
-div to shareholders	-200

54094 x 1000 = 54,094,000

(Assume that this is deferred tax liability, not asset)

Examiner's Report

a) This part was generally responded to well, with most candidates receiving at least half credit for their solutions.

The most common mistake was excluding the impact on net income relating to the change in unearned premium (UEPR) liability on Contract A. Some candidates assumed that Contract A earned premium was not calculable since its written premium was not given; however, the question stated that all Contract A written premium was collected on the original effective date and therefore, written premium for Calendar Year 2011 is zero.

The next most common mistake was not selecting/calculating the UEPR correctly for Contract A based on the results of the three tests. Common incorrect methods included:

- Using the minimum of the three tests instead of the maximum
- Calculating an average of the three tests

The next most common mistake was not realizing that the impact of the Contract A UEPR on net income resulted from the change in UEPR between December 31, 2010 and December 31, 2011, and that a decrease in the UEPR resulted in an increase in net income.

The most common error unrelated to the Contract A UEPR was including the dividends to shareholders as a component of net income.

Other less common errors included:

- Including other direct charges/credits to surplus as net income (i.e., change in non-admitted assets, change in provision for reinsurance, change in deferred income tax, change in net unrealized capital gains)

- Excluding other net income elements (i.e., underwriting income, investment income, other income, or policyholder dividends). Some candidates made the assumption that policyholder dividends were included already in the "other income" amount; credit was given for this assumption.

b) This part was generally well-answered with most candidates receiving full or nearly-full credit.

   The most common mistake was not including the dividends to shareholders as a charge to surplus. However, some candidates included dividends to shareholders as an element of net income in part (a) and in these cases no additional credit was deducted in (b) for failing to include this amount.

   The next most common mistakes were related to the direction of impact of each direct charge/credit to surplus element. Most commonly, the change in deferred income tax was added as opposed to subtracted from surplus.

   A third type of common mistake was using December 31, 2011 amounts as opposed to changes in amounts for certain direct charges/credits to surplus, especially for the unrealized capital gains and deferred income tax.

   In general, when candidates included items in (b) that should have been included in (a), no additional points were deducted from the part (b) score.

17) Sample Answer

Answer 1

A) total inv gain = 3112 + 6867 = 9979
EP = 68200
Inc loss + LAE = 41700
Total expenses = prepaid + ½ general (1/2 general already included in prepaid)
= 33650 + ½(4500) = 35900
Dividends = 500
Total profit = 68200 + 9979 – (41700+35900 +500) = 79
B) In deciding whether a given line is profitable, it is important to look at all related income and expenses. Therefore stockholders could use this calc for that purpose.
C) The IEE allocates investment income to LOB by formula which may not be accurate or appropriate. For example, a LOB with hurricane exposure will need (and in practice) have more surplus (and therefore, inv. inc.) than the formula provides.
Look instead at internal risk models that more appropriately allocate surplus and investment income.

Answer 2

A) 68200 – 33650 - .5(4500) – 500 – 41700 + 3112 + 6867 = 79
EP Δ ppexp gen exp div inc loss inv gains
B) Allocates profit/(loss) to line so that internally we can get a better picture of how profitable we are by line, which we can't entirely do with just underwriting results.
C) The IEE allocates surplus to line based on EP for the year, prem loss & LAE reserves and even UEPR. This may not be appropriate for some lines that are volatile in loss or are short-tail but have large losses, or vice versa. Plus it is retrospective. Instead, an actuary should determine the surplus that should be held for a line based on its projected reserves and other characteristics, and determine the investment yield on that to get the indicated rates.

Answer 3

A) Total Inv Gain = 3112 + 6867 = 9979
Total Profit/Loss = 68200 – 33650 – ½(4500) – 500 – 41700 +9979 = 79
EP PPE need to + PH loss & inv. inc
back in ½ div LAE
gen exp
B) See if line of business is meeting target profit; if not may need to revise rates.
C) IEE method uses retrospective measures to assign surplus and inv income to a line of business. If there is a change in the mix of business the retro allocation of IEE may not be appropriate. A more appropriate measure of profitability would be look at insurer's calculation of required return on capital for that line. Looks at prospective measures included in new business rates, not retro measures of IEE method.

Examiner's Report – Q17

a) Candidates generally performed well on this part, though very few received full credit. The most common error was incorrectly calculating the Total Expenses. Most candidates either included all general expenses or excluded them completely. Less than 10% of candidates correctly excluded one-half of the Net General Expenses from the calculation. Other mistakes included ignoring dividends or investment gains.
b) A Large majority of candidates received full credit for this part. The most common error was not describing that the IEE provides information by line of business.
c) To receive credit for the first part of part c, it was important that the candidate demonstrate they understood not only that rate adequacy is prospective while the IEE is retrospective, but also the reasons why that difference is relevant (growth, change in mix of business, volatility differences by line, simplistic investment allocation methodology, etc.). Unacceptable answers included:
    - IEE is calendar year
    - IEE doesn't include future investment income
    - IEE uses historical reserves

    To receive credit for the second part of part c candidates needed to state an alternative measure and describe why it would address the issue discussed in the first part of part c. Acceptable answers needed to have specific suggestions for better measures of future reserves, surplus, or investment income. Unacceptable (due to being non-specific or incomplete) answers included:
    - Use pricing actuaries indications
    - Use Schedule P ratios
    - Use IRIS ratios

18) Sample Answer

Part A

US Treasury Bonds	21,333
Regional Energy Company	14,965
CMOs	8,207
Total	44,505
	Book/Adjusted
Common Stocks	Carrying Value
Total	11,000
ASSETS	
Bonds	44,505
Stocks	11,000
Real Estate	
Properties occupied by the company	2,000
Properties held for the production of income	15,000
Properties held for sale	200
Cash	4,500
Other Invested Assets	2,300
Net deferred tax asset	10,000
TOTALS	89,505
LIABILITIES, SURPLUS AND OTHER FUNDS	
Losses and Expenses Unpaid	
Gross	62,000
less Ceded	13,870
Net	48,130
Other expenses	500
Ceded Rensurance Premium Payable (net of ceding commissions)	400
Provision for Reinsurance	75
Total liabilities	49,105
Common Capital Staock	400
Gross paid in and contributed surplus	40,000
Surplus as regards policyholders	40,400
TOTALS	89,505

Part B

1. Collateralized mortgage obligations represent a relatively high percentage of the assets, and are subject to high volatility in value.
2. Common stocks represent a relatively high percentage of the assets, and are subject to high volatility in value.
3. The company has a substantial investment in low-grade bonds (NAIC Class 3 & 5), which have a relatively high risk of default.
4. Fixed income securities: in a high interest rate or high inflation environment, bond values would decline.
5. There is a constant potential for the devaluation of real estate, and thus lower statutory surplus.
6. Cash is a relatively small percentage of the total assets; a few large dollar claims could easily eat through this.

7. The company has a high percentage of its assets invested in real estate and CMOs, which are relatively illiquid, and a low percentage in cash.
8. The company's bond portfolio does not appear to be well-diversified, as it has a sizeable investment in a single corporate bond (Regional Energy Company).

Examiner's Report

a) Many candidates were able to identify the correct figures to enter on the balance sheet for common stock, real estate, and each category of bonds. Common errors made by a number of candidates included:

- Including the surplus accounts on the asset side of the balance sheet
- Including both paid and unpaid losses on the balance sheet
- Using gross (of reinsurance) unpaid losses instead of net
- Subtracting anticipated sal/sub from the Schedule P unpaid loss amounts (the Schedule P figures are already net of anticipated sal/sub)
- Defining total surplus as the difference between total assets and total liabilities PLUS the two surplus accounts.

b) There were several valid responses to this question related to the volatility or potential devaluation of the company's assets. Common candidate responses that did not receive full credit included:

- Gross Paid in and Contributed Surplus – a number of candidates believed the fact that most of the company's surplus is in this category (and not Unassigned Funds) to be a sign that the company is not profitable. However, the amount shown on the balance sheet is not an amount that was paid in during the current year – it is a cumulative amount to date. This amount could have remained unchanged since the formation of the company and the company could simply be paying out its profits as dividends on a regular basis.
- Net Deferred Tax Asset – the fact that this amount is admitted on a statutory basis (given) indicates that it is fairly certain to be recovered (see Blanchard, p.21).
- Ceded reinsurance/reinsurer solvency. There are no recoverables related to reinsurance shown on the balance sheet, so the only amounts at risk in the event of reinsurer insolvency are the ceded loss reserves. The candidate was asked to discuss two items *other than loss reserves*.
- Provision for Reinsurance – the amount shown on the balance sheet is very small. Even if it were underestimated significantly it would not be a risk to the company's financial health.
- Anticipated sal/sub – even if the company is unable to realize a significant portion of the anticipated amount, it would not represent a risk to the company's financial health.

19) Sample Answer

Part a

Reinsurer #1 (Authorized, so test for slow-paying)

Test Ratio = (Paid Loss Recoverables> 90 Days Overdue Not in Dispute) / (Total Paid Loss Recoverables Not in Dispute + Amounts Received in Last 90 Days)
= 25 / (95-1+35) = 19.37%

19.37% < 20%, therefore not a slow payer

Provision = 20% (Amount > 90 Days Overdue) + 20% (Amount in Dispute)
= 0.20 x 25 + 0.20 x 1 = 5.2

[If an assumption that no amounts in dispute were more than 90 days overdue is explicitly stated,the 0.20 x 1 could be omitted.]

[If an explicit assumption is stated that the “over 120 days overdue” amount is not included in the “over 90 days overdue” amount, then the test ratio becomes (25+15) / (95-1+35) = 31.01% and the slow-pay formula must be used:

Provision = 20% of Max (Total Unsecured Recoverables (including amount in dispute), Loss Recoverables> 90 days due)
= 0.2 x Max(120-0, 25+15) = 0.2 x 120 = 24]

Reinsurer #2 (Unauthorized, so test for slow-paying is not needed)

Provision = Total Recoverables - Collateral + Min (20% Amount > 90 Days Overdue, Not in Dispute + 20% Amount in Dispute, Collateral)
= 150 - 60 + Min(0.20 x 10 + 0.20 x 7, 60) = 93.4

Total Provision

= Sum of provision of 2 reinsurers = 5.2 + 93.4 = 98.6

Part b

Best Answer:

The Schedule F provision is used for statutory accounting because regulators, who are concerned with the potential insolvency of companies, prefer a conservative estimate of assets. In this view, a fixed formula is better than the opinion of company management, which may have an incentive to overstate assets or understate liabilities.

Management's best estimate is used for GAAP accounting, which focuses on current and potential investor's interest in the company as a going-concern and its future profitability. Investors want unbiased estimates (not conservative estimates or optimistic estimates) which the firm's management is best qualified to provide.

Acceptable Answer:

Statutory accounting is for regulators monitoring potential insolvency/liquidity issues; they use a conservative fixed formula to avoid management's potential understatement of uncollectability.

GAAP accounting is for current/potential investors interested in future profitability or company as a going concern; management is best qualified to give an unbiased estimate.

Part c

Best Answers (2 needed):

1. Increase in provision could be caused by a shift to unauthorized reinsurers, but management may believe that these reinsurers are just as reliable, i.e., the risk of uncollectability is unchanged.
2. The slow-pay test ratio for an authorized reinsurer could have increased slightly, but crossed the (arbitrary) 20% threshold, i.e. an increase from 19.4% to 20.1% does not represent a truly significant change in collectability risk, but increases the provision.
3. The management of the company may have lowered the collateral required from a reinsurer(s), e.g. due to good prior experience or improved credit rating, and believes that collectability risk has not changed.

Acceptable Answers (2 needed):

1. Shift from authorized to unauthorized reinsurers, but management believes they are just as reliable.
2. The slow-pay test ratio for an authorized reinsurer (e.g. Reinsurer #1) just barely crosses the 20% threshold, which is arbitrary.
3. Lowered or eliminated collateral requirement for reinsurer(s) that management believes are reliable.

Part d

Best Answers (2 needed):

1. The provision doesn't measure the most serious and controllable risk: inadequate reinsurance or poor reinsurance arrangements.
2. The provision ignores major indicators of potential uncollectability, including the capital structure of the reinsurer, or the extent of reinsurance liabilities in an adverse scenario.

Acceptable Answers (2 needed):

1. Discourages use of unauthorized reinsurers that may be cheaper **and** just as reliable.
2. Provision can be manipulated by company (specific example must be included)
3. *(if not mentioned in part c)* The 20% slow-pay threshold is arbitrary; a reinsurer can cross the line a little bit without a significant change in reliability.
4. *(if not mentioned in part c)* Encourages use of collateral, which will increase expenses to the company.

Examiner's Report

Common Mistakes on Question 19

19 a)

- Failing to test authorized (and/or testing unauthorized) reinsurer for slow-pay status
- Neglecting to subtract the disputed amount from paid loss recoverables in the test ratio
- Not including 20% of the amount in dispute (unless an explicit assumption was stated)
- Failing to add the two parts of the provision to get a final answer
- Calculation errors

19 b)

- No mention of the audience for each accounting method (statutory: regulators; GAAP: investors)
- No mention of the focus of each accounting method (statutory: solvency; GAAP: going concern or future profitability)
- Not mentioning the need for conservatism or a fixed formula when evaluating solvency
- Not mentioning that management can provide an unbiased estimate for GAAP

19 c)

- Answering the more general question of why the provision might differ from the management estimate, rather than addressing the specific situation where the provision increases relative to the management estimate
- Talking in general about the shortcomings of the provision (i.e. answering part d)
- Describing a scenario that changes the provision without explaining why the management estimate doesn't change
- Describing situations where the management estimate arguably should also increase (e.g. more disputed amounts)
- Dividing a single concept into two parts, i.e. both answers are variations of the same idea
- Simply describing a reinsurer(s) as "better" rather than describing greater reliability, lower credit risk, etc.

19 d)

- Dividing a single concept into two parts, i.e. both answers are variations of the same idea (e.g. provision encourages use of collateral and discourages use of unauthorized reinsurers)
- Restating answers that were more appropriate for part c
- High-level answers without examples or sufficient explanation
- Simply describing a reinsurer(s) as "better" rather than describing greater reliability, lower credit risk, etc.

20) Sample Answer

Part A

Answer 1

Basic charge WC = $avg\left(1.04, 1.04\left(.\frac{87}{.80}\right)\right)(.89) + .27 - 1 = .2361$

Basic charge MM = $avg\left(.93, .93\left(.\frac{72}{.74}\right)\right)(.81) + .21 - 1 = .0131$

Initial charge = $(.2361)(900\text{K}) + (.0131)(1800\text{K} - 80\text{K}) = 235022$

Loss sensitive discount = $(.30)(.50)(.2361)(900K) = 31874$

CM Discount = $(.2)(.75)(.0131)(1800K - 80K) = 3380$

PCF = $.70 + .30\left(\frac{1800-80}{2700-80}\right) = .8969$

$$R_5 = (235022 - 31874 - 3380)(.8969) = 179172$$

Answer 2

	medical malpractice	workers compensation
1) Industry woste case	93%	104%
2) Company difference	$\frac{.72}{.74} = 0.973$	$\frac{.87}{.80} = 1.0855$
3) Company won't case	$\frac{0.93+0.973(0.93)}{2} = 0.917$	$\frac{1.04+1.0815(1.04)}{2} = 1.0855$
4) Inv. Inc. adjustment	0.81(0.917)=0.743	0.89(1.0855)=0.966
5) Company expenses	0.27	0.27
6) Combined ratio	1.013	1.236
7) Basic charge	(1800-80)(1.013-1)=22.36	900(1.236-1)=212.4
8) Loss sensitive	0	0.3(0.5)(20.4)=31.86
9) Claims made	(0.75)(0.2)(22.36)=3.354	0
10) Total	19.006	180.54

-> total = 199.546

Premium correction factor=$0.7 + 0.3\frac{1720}{2620} = 0.897$

Total = $178,982

Answer 3

WC = $\left[\frac{1}{2}(\frac{.87}{.80} + 1)x1.04x0.89 + 0.27 - 1\right]x(0.5 + 0.5x0.7)x(900)$

= 0.2x900

=180

MM = $\left[\frac{1}{2}\left(\frac{.72}{.74} + 1\right)x0.93x0.81 + 0.27 - 1\right]x(0.25 + 0.75x0.8)x(1800 - 80)$

= 0.011 x 1720 = 19

Total = (180+19)x(0.7+0.3x1720/1720+900)

= 178

Answer 4

	WC	MM	total
1) Co Avg L & LAE	.87	.72	
2) Industry Avg	80%	74%	
3) Industry worst	104%	93%	

4) {(1)/(2)x(3)+(3)}x0.5 1.0855 .91743
5) Investment Income .89 .81
6) {(4) x(5)}+(Co U/W Exp .27) 1.236095 1.0131207
7) NWP 900 1720 2680
8) Initial Charge {(6) – 1} x (7) 212.485522.56686
9) % CM 0.75
10) CM Discount {(9)x0.2}*(8) 0 3.385
11) % Loss 50% 0
12) {(11) x 0.3}x(9) 31.872825 0
13) (8)-(10)-(12) 180.01207 19.1818 199.7945
14) PremConc (1720/2620) .65640
15) 0.7 + {0.3 x (14)} .8969465
16) Charge {(13) x (15)} 179.205

Part B

Answer 1

- $\frac{(2700-80)-(2250-75)}{2250-75} = 20.5\% < 33\%$

  Moves in the usual range.

Answer 2

- ratio = $\frac{(2700-80)-(2250-75)}{2250-75} = .2046$

  Yes; range of usual values: -33% to 33%

Part C (each difference listed was worth 0.5 point and only one difference from each category was accepted)

Premium

- "R3 uses net premium; RBC growth charge uses gross premium"
- "RBC growth use direct & assumed prem. IRIS uses net."

Company

- "R3 based on total premium of a company; RBC charge based on total premium of entire group"
- "RBC growth uses premium from pool. IRIS uses individual company."

Years Used

- "IRIS 3: only one year-over-year. RBC: avg of last three year-over-year"
- "IRIS Ratio 3 only looks at 2 years of data, while RBC uses up to 4 (if available)"

Discounts

- "The 90% in the growth charge is a discount factor. No discount for IRIS."

Ranges

- "RBC growth charge applies to premium growth >10% vs 33% for IRIS #3."
- IRIS concerned about negative growth more than -33% where RBC only cares about excess positive growth.

Capping

- “The growth charge is capped at 30% for RBC. There is no cap for IRIS.” (Also excepted - RBC is capped at 40% premium growth, but no capping for IRIS.)

Purposes

- “RBC wants to make sure there is enough capital for growing business. Ratio is testing to see spike in WP before a possible insolvency.”
- “IRIS #3 is concerned about change in NWP. Company could be trying to increase CF to meet PH obligations. RBC concerned about risk that newly written business will not be profitable.”
- “The RBC growth charge assesses a “penalty” for growth exceeding 10% per annum, whereas the IRIS ratio 3 only alerts the company and regulator if the change is about 33% (increase) or below -33% (decrease).”

Examiner’s Report

Question 20 Common Mistakes

Part A

- Input Issues
  - Calculated base RBC out of order
    - Applied expense adjustment before investment income discount
    - Applied Loss Sensitive discount or Claims Made Discount before expense or investment income adjustment
  - Flipped Inputs (used Med Mal for Work Comp or vice versa)
- Premium Issues
  - Calculated using gross written premium instead of net written premium
  - Flipping the premium (used Med Mal for Work Comp or Vice Versa)
- Discount Issues
  - Used wrong percentage discount for Claims Made
  - Used wrong percentage discount for Loss Sensitive
  - Used wrong formula for Claims Made
  - Used wrong formula for Loss Sensitive
- Premium Concentration Factor applied incorrectly
  - Calculated using gross written premium instead of net written premium
  - Calculated separately by line, using each line’s premium instead of the largest line’s premium
- Growth Charge
  - The question specifically did not ask for the growth charge, but some candidates included it. No points were added for including the growth charge and no points were taken away for not adding the growth charge or if the growth charge was done incorrectly.

Part B

- Divided by Policyholder surplus instead of last year's net premium
- Calculated the ratio by line instead of for the total company
- Did not state usual range or incorrectly stated usual range in assessment

Part C

- Just listing the formula (this is not briefly describing a difference)
- Listing difference compared to general RBC formula not specifically growth charge
  - Stating RBC is by line of business and IRIS is not (growth charge is aggregated)
  - Stating RBC applies loss sensitive discounts, claims made discounts or premium concentration and IRIS does not (growth charge does not apply these adjustments)
- Mismatching the comparison of years used in calculation
  - Stating IRIS uses one year and RBC uses four years
  - Stating IRIS uses two years and RBC uses three years
- Stating a fact about one without a comparison to the other
  - RBC used gross written premium (what about IRIS…how is this a difference?)
- Statements that were too vague or not specific
- Forgetting to state which difference belonged to which calculation
  - One is gross other is net (which is which?)
- Making both comparisons related to the normal range of the calculations (only counted as one difference)
  - IRIS cares if ratio is over 33% versus RBC caring over 10%
  - IRIS concerned about negative growth over 33% where RBC is only concerned with positive growth
- Stating RBC uses direct premium (only counted if it said direct AND assumed)

21) Sample Answer

Answer 1

a. Iris 5 = Loss & LAE ratio + expense ratio - investment yield ratio
= (17799+13832+(298+268))/(21280+25684) + ((5320+6549-59-68)/(24580+22122)) - ((680 + 560)/(21280+25684))= 68.56% + 25.14% - 2.64% = 91.06% < 100%; In the normal range.

b. Iris 7: Change in Surplus = (5012-7705)/7705 = -34.95% < -10%
Not in the normal range. Regulator needs to look at Iris 8 change in adjusted surplus.
Iris 1: GWP/PHS = 45430/5012 = 906.42% > 900%
Not in the normal range. Regulator should look at Iris 2 NWP/Surplus to see if it is normal.

Answer 2

A)

$$\frac{13832+17799+298+268}{21280+25684}+\frac{5320+6549-59-68}{24580+22122}-\frac{680+560}{21280+25684} = .911 < 1$$

Not unusual, therefore regulator would be okay w/result.

B)

GWP/surplus = $\frac{45430}{5012} = 9.06 > 9$; unusual – look at profitability, LOB and NWP/surplus

NWP/surplus = $\frac{24580}{5012} = 4.90 > 3$; unusual – look at profitability, LOB, reinsurance adequacy

Answer 3

A)
Loss ratio = (13832+17799+298+268)/(21280+25684) = .686
Expense ratio = (5320+6549-59-68)/(24580+22122) = .251
Invest ratio = (680+560)/(21280+25684)=.026
IRISS = .686+.251-.026 = .911 < 1
This is not unusual

B)
GWP/surplus = 45430/5012=9.06>9
This is unusual; regulations will want to be sure this insurer is profitable.
NWP/surplus = 24580/5012 = 4.9 >3
This is unusual; regulator will want to make sure insurer is profitable and that reinsurance is collectible.

Examiner's Report

A

Responses on this part of the question were mixed. While many candidates understood the components of an operating ratio, there were numerous mistakes, with the most common being: ignoring policyholder dividends, ignoring other income, and including (or subtracting) realized capital gains with (from) net investment income earned. Generally, candidates were able to correctly assess the ratio from the regulators perspective; however, some candidates missed the point that IRIS ratios are used for solvency review, as they said the regulator might look into excessive rates.

B

Generally, candidates responded well to this question. The most common mistake was using the data from the wrong year in the calculation, but most candidates could identify and assess two other ratios from the information given.

22) Sample Answer

Part A

Answer 1

- Increased use of internal models – company's own model can better align their risk and capital need
- ORSA – own risk self assessment – helps regulators if company assesses their own risk in addition to regulatory review
- Inclusion of CAT risks – CATs pose a large risk that currently isn't being captured in RBC or IRIS tests

Other acceptable answers for a)

- Prudent person investment strategy - insurer can better make investment choices that align with insurer needs. Can more easily adapt with changing market (i.e. new investment options/strategies)
- Tying capital requirements to specific statistical levels - Solvency II requires capital to be held to a Variance at Risk level of 99.5%. So in only 0.5% of scenarios will the company have insufficient capital. US Based regulation has capital requirements that are rather arbitrary and don't have statistical significance.
- Allow for selections of correlational amongst different risks classes to become more accurate than 0 or 1
- More emphasis on principle based regulation
    - Rules based stifles evolution, encourages gaming of rules, poor reaction to changing markets
    - Principle based is more flexible and responsive
- Own Risk Solvency Assessment not required by US but required for Solvency II could improve US regulation by requiring US insurers to complete assessment and submit report to regulators.
- Use more principle based regulation as rules based may cause more regulatory arbitrage and companies may be too complex for effective rules based regulation.

Part B

Answer 1

- Assumptions that past can fully predict the future
    - There will always be a new kind of crisis in the future that has not happened in the past
- Companies tendency to ignore certain risk
    - Such as liquidity risk. This is the cause of companies going bankrupt as 2008 economic meltdown shows
- Model fails to account for extreme correlation during line of turmoil
    - The correlation changes during bad financial crisis such as downgrade/default of high yield bonds affecting inv grade bonds as well.

Answer 2

- Models are complex and hard to follow. Hard for regulators to approve model for use
- Data being used as input is optimistic data
  Data from "good" years would output lower capital need than would be needed in bad years
- Companies could manipulate model to give result they want. Wouldn't be accurately measuring risk.

Other acceptable answers for b)

- Structure of models; Models tend to be Gaussian which is not reflective of the true distribution.
- Management and internal models tend to ignore certain classes of risk that turn out to be important in retrospect (i.e. liquidity risk)
- Ignore the change of correlations during bad time. Systematic risks could reduce the surplus dramatically during financial crisis
- Assume that past can predict future which might not true

Examiner's Report

a) Many candidates offered reasonable improvements, however there were several common errors:

Candidates often neglected to explain how the feature of Solvency II they listed was an improvement over the U.S. system or gave a very vague and general explanation

Several candidates claimed Var would be an improvement over TVar (a well-thought out justification would have been required to receive credit for this); however, credit would be given for explaining how using a statistical standard was an improvement over RBC

Several candidates listed and defined the 3 pillars of Solvency II, without tying them to possible improvements to the U.S. system

Several candidates listed features of Solvency II that are already part of the U.S. solvency regulation (e.g. ability of regulators to intervene)

b) Many candidates offered reasonable criticisms, however there were several common errors:

Candidates often neglected to explain how the feature of internal models they listed was a concern or gave a very vague and general explanation

Several candidates misunderstood the question and discussed features of pricing models rather than capital models

Several candidates listed criticisms of Solvency II that were not related to the use of internal models

Several candidates listed the same concern regarding regulation 3 times, but with different explanations. Credit was only given for 1.

23) Sample Answer

Answer 1

A)
- SAP – will reduce loss reserve
- GAAP – will be recorded as assets
- IFRS – no offsetting is allowed

B)
- SAP generally doesn't allow discounting of reserves, except 3 circumstances:
  - Tabular discount
  - Allowed by Insurance Commissioner
  - Certain Med Mal writers
- IFRS allows discounting if the payment pattern is known or can be reasonably estimated.

C)
- SAP – acquisition costs are expensed and deducted as soon as it is incurred.
- GAAP – will setup an asset called deferred acquisition costs and amortize it in proportion to the revenue recognition (in the same pace as the corresponding premium being earned).

Answer 2

A)
- SAP – unpaid reins recoveries are included within reserve liability and serve to reduce the value.
- GAAP – unpaid loss recoveries are recorded as an asset; "ceded reins recoverable"
- IFRS – no offsetting is allowed for recoverable

B)
- SAP – only tabular discounts are allowed for certain lines; non-tab discounts may apply in certain exceptions, but generally loss reserves are not discounted under SAP.
- IFRS – loss reserves are discounted, but then an explicit re-margin is applied.

C)
- SAP – acquisition costs are expensed at once when the policy is written.
- GAAP – acquisition costs are capitalized and deferred; a DPAC asset is established and amortized over the life of the policy terms.

Answer 3

A)
- SAP – reserves are shown net of R/I recoveries
- GAAP – R/I recoveries are shown separately as an asset under "ceded recoverable"
- IFRS – offsetting of reserves by ceded recoveries is prohibited.

B)
- SAP – reserves are presented on undiscounted basis, unless permitted by Insurance Commissioner under special circumstances
- IFRS – discounting is permitted and a risk margin is also added.

C)
- SAP – all acquisition costs are recognized immediately at time they are incurred

- GAAP – a deferred policy acquisitioncost (DPAC) asset is set up to defer the recognition of acquisition cost to match revenue to expense. The DPAC is amortized over the remaining term of the contract.

Examiner's Report

On part a, the most common error was to state that GAAP and IFRS were the same, which isn't exactly right. Another common error was to state that for SAP the recoverables were a contra liability, but didn't state to what entry they were a contra liability (the reserves). In general, candidates did best on SAP, then GAAP, then IFRS.

On part b, the use of absolutes got some candidates in trouble. For example, SAP does not "only allow tabular". It was acceptable to state that "SAP generally doesn't allow discounting, while IFRS does." Candidates appeared to do well on part b.

On part c, we felt the key was the timing of the recognition. SAP fully records the acquisition costs immediately, while GAAP reflects them over the earning period of the underlying policy. The creation of the DPAC asset in GAAP is part of the mechanism that makes that so, but we felt it not correct to only state that "GAAP creates an asset" without further explaining how the costs are recognized over time. It was acceptable as an answer to ignore the DPAC asset and contrast the recognition as "SAP fully recognizes acquisition costs immediately, while GAAP recognizes them over the earning period of the policy." That distinction on the GAAP answer is likely where most lost some credits on part c.

24) Sample Answer

Regulatory Basis

a. Principal-based – Principal based regulation should be used. Rules-based approach could be gamed and could also stifle innovation
b. Rules-based – modeled solution:
    i. A rules-based approach is one way to address the potential for regulatory errors, the problem of regulatory forbearance.
    ii. Principle-based insurance relies on key assumptions: insurer's incentive to manage risk, regulators not able to distinguish between effective & ineffective firms, internal models more effective at risk differentiation, & that regulators will take action when firm's did not manage risk == these are all questioned in light of recent market turmoil
    iii. Provides consistent standard for all companies. Less prone to interpretation.
c. Combination – A combination of both. Rule: can sometime games the system. Principal: insurer needs to have incentive to manage risk& allows them to keep up with increasing complexity of insurance market.

Examiner's Report

1. Generally, each of the options could be supported.
2. For the "Combination" option, it was required that a candidate provide either a positive trait for each Principle-based & Rules-based or provide a flaw in each that could be improved by the other.
3. Also, full credit was not given for the answer "Combination provides flexibility of principle-based and structure of rules-based". A more detailed explanation was required.

Regulatory Involvement

a. Low – Regulatory involvement is highly costly and there is question as to whether regulators are even able/willing to identify risky firms and require corrective actions. An insurer has incentive to manage its own risk and has a better handle and understanding of its own challenges/risk.
b. High– A high level of regulatory involvement is recommended, including financial reporting and filing, quantitative analysis and monitoring regular examinations and regulatory intervention when necessary.
c. Combination – Somewhere in between. High regulatory involvement adds high compliance costs while low regulatory involvement may lead to insurers being slack about monitoring insolvency, thus a mix of both is preferred.

Examiner'sReport

1. Generally, each of the options could be supported.
2. Many candidates answered this part with a discussion of rate regulation (competition, rate wars, cost) and/or public interest (cost, availability), but did not specifically discuss solvency impacts

3. A complete answer could have included: corrective actions, solvency or regulatory monitoring, examinations/audits/analysis of financial performance, regulatory review of insurer, etc.

Minimum Capital Requirements

a. RBC– RBC gives regulators authority to intervene when necessary and specific actions they should take. Also, more familiar to companies, lowering expenses of making a change to Solvency II
b. Solvency II – RBC is too restrictive and does not do a good job of lining up firm risk with capital requirements, so Solvency II allows a more accurate alignment, while still providing a basis for intervention with SCR & MCR
   Or
   I propose a Solvency II type capital requirement. Some benefits include the 99.5% VAR calibration, the use of internal models to promote risk management culture, and international standards are typically more modernized.
c. Combination – RBC is great, but lacks certain risk criteria like CAT/operational risk, etc where Solvency II picks it up. And Solvency II only has prudent person approach, which can lead to non-uniform models and require a lot of work to maintain/approve for use, etc. A combination of the better attributes of each is needed as well as a uniform and convenient/efficient approach.

Examiner's Report

1. Generally, each of the options could be supported.
2. For the "Combination" option, it was required that a candidate provide either a positive trait for each RBC & Solvency II or provide a flaw in each that could be improved by the other.

Accounting Standard

a. Statutory– Accounting standard should be statutory. It still needs to focus on solvency and to ensure obligations to policy holders are met. Needs to be conservative.
b. GAAP – GAAP: as long as solvency regulation is in place most users of financial statements are concerned with the company as a going concern and its realistic market outlook. Only regulators are concerned with liquidation value and IFRS has some excessively prudent approaches.
c. IFRS – IFRS, this allows for the best estimates of currency solvency and future profitability. STAT takes on overly conservative view in order to focus purely on solvency. GAAP allows for too much management input to focus purely on earnings.

Examiner's Report

1. Generally, each of the options could be supported.
2. For the "IFRS" option, full credit was not given for answers related to global or international standard as this did not address the solvency of an organization.
3. Complete answers included commentary on the valuation methods.

25) Sample Answer

Answer 1

1) Yes, Actuary must state scope of what opinion covers

2) No, Actuary does not disclose his range/point estimate in his opinion (unless there is an inadequate or excessive provision). Actuary is opining on whether held reserves are reasonable.

3) Yes, as gross and net reserves are being opinioned on, Actuary should state his assumptions in regard to reinsurance collectability. This should cover Sch F, ratings of counterparties, conversations with mgmt… under relevant comments in the Reinsurance section.

4) Yes. This is 10/177 = 8.5% of carried loss reserves. This is a significant amount and should meet the material adverse deviation standard.

5) No, this amount is not material

Answer 2

1) This would be disclosed in the opinion section within the scope of SAO, where the actuary describes what was reviewed and what opinion is held about what was reviewed.

2) This would not be disclosed. The actuary would never disclose their results in an SAO, except when discussing the amount by which the company is redundant or excessive, but since the company is within their range, none is required.

3) This would be disclosed in the relevant comments – Reinsurance Section that the actuary held discussions with management since the amount ceded is material and that no collectability issues are known.

4) This would be disclosed in the Relevant Comments - Risk of material adverse deviation section. The $10M is material since the actuaries range including the law suit would be $125M to 175M causing the company's reserves to be deficient.

5) This would not be disclosed since it would not be material (opposite of iv). The revised range including the lawsuit would be $115.017M to $165.017M not affecting the reasonable opinion.

Answer 3

Net 117, gross 195

i) Yes, in exhibit A. Must disclose an opinion as well

ii) Do not disclose range or central estimate. Disclose that the reserves make a reasonable provision for all unpaid loss and loss expense obligations

iii) Needs to disclose relevant comments on reinsurance. --talks with management on uncollectibility should be disclosed.

iv) Assuming the estimates in ii are true, $10 has a material effect and should be disclosed. Also disclose materiality standard (here being (125-115)/125 =8% of reserves), disclose how the standard was derived, disclose any risk of material adverse deviation and the factors that cause MAD

v) Not material; does not need to form an opinion or comment in relevant comments. Don't disclose.

Answer 4

i) The actuary would state this in the scope paragraph. There isn't need for additional disclosure beyond the scope paragraph, but they need & want to let the regulators know they looked at it.

ii) In the opinion paragraph, they would state that there is a reasonable provision for loss & LAE reserves. No need to disclose their amount, however, this is stated in the AOS. This is because the companies held reserves is within the actuaries range of estimates.

iii) This would be disclosed in the relevant comments. Reinsurance is a major concern so regulators want to know there are any issues.

iv) This needs to be disclosed because this is a type I subsequent event there is a significant chance that there will be additional losses of $10M that they will realize. This is 8.5% of held reserves, so this is a material amount.

v) they would not have to disclose this because it is a small amount (0.01%) of held reserves and is immaterial,

Answer 5

i.) yes; part of scope (ASOP 36, COPLFR)

ii.) no; these items are part of AOS

iii.)Yes; collectability is part of relevant comments and actuary consults management, financial ratings and schedule F

iv.)Yes; (risk of material adverse deviation); it's a type I subsequent event and 117+10=127 is within actuary's reasonable range

v.) no, not material.

Examiner's Report

In part i., a common mistake was that the candidate would answer that yes, one must comment on the reserves gross and net, but would not answer why. We were looking for "required in scope paragraph", but often did not receive that.

In part iii, many candidates answered that yes, must comment if there are no expected problems with collectability, but the most common mistake was that the candidates neglected to mention that comment is only needed if material.

By and large, there were not frequent mistakes for the other parts.

26) Sample Answer

Part A

- Purchased a company and that company's reserves our actuary does not agree with; these reserves are material and company lacks sufficient historical data for actuary to properly opine on reserves. Issue a qualified opinion, disclose amount not opining on and reason – due to acquisition and lack of proper historical data.
- Actuary is unable to review a material portion of the insurers book
  - Ex: Insurer write GL policies and has exposure to asbestos pools from before 1980
  - Insurers GL rsvs are 500M range of reasonable 450M-550M
  - Insurer B unable to provide AA w/data relating to asbestos losses
  - Revs for asbestos are 200M
  - Appointed Actuary (AA) would issue a qualified opinion; GL portion is reasonable; unable to opine on asbestos portion.
- Participates in involuntary pool; reserves from this pool significant but actuary not provided any data and therefore unable to review reasonableness of reserves from pool
- If a consulting actuary was hired to opine on the adequacy of insurer's loss & LAE reserves for its property insurance line only which are held at say, $400M; but company also writes private passenger auto business and reserves held for it are say $100M. In this case the actuary will issue a qualified opinion that excludes the auto reserves, because it is outside the scope of his assignment.
- An actuary would issue a qualified opinion if, for a material portion of loss reserves, an opinion could not be made, possibly because there was not enough information available, insufficient company data and no relevant appropriate industry data, or if another actuary performed the work and the appointed actuary did not review it.
- If there's a significant portion of reserves that could not be reviewed; one reason is lack of data.

Part B

- Assume that appointed actuary's range is $600M-700M. company booked of $500M below low end of range so opinion would be deficient.
- Assume that actuary's range of reasonable est is $\pm 25\%$ of central thus 487.5 (low), 812.5 (high). Since 500 is within the range, disclose a reasonable opinion.

- I would create a deficient opinion. The 500M is way outside any range that the actuary would have come up with based on his central estimate of 650M. $\frac{500}{650} = 0.7692$; so company is only carrying 77% of actuary's central estimate, and I don't believe range of reasonable estimate would drop that low.

Examiner's Report

Part A

Common mistakes were:

- Failing to mention materiality
- Failing to link the scenario (e.g. no available data) to being unable to opine or review the reasonableness of reserves
- Using 'Relying on another actuary's work/opinion' as a scenario which is not appropriate unless part of the reserves our "out of scope" by one actuary and opined on by another.
- Using 'a new company with no data' as a scenario (this a 'no opinion' SAO)
- Giving vague answers that don't qualify what is discussed (i.e. not mentioning 'reserves')

Part B

Common mistakes were:

- Assuming "No reasonable range" and then comparing the numbers given.
- Candidate wrote down a numerical range, but did not specify whether the booked reserve was inside or outside the range to justify their opinion.
- Comparing booked reserve with the point estimate as justification for a deficient opinion, with no mention of reasonable range
- Using other names for reasonable range (e.g. risk margin, confidence interval, materiality)
- Instead of applying a range around the central estimate, candidates applied a materiality standard to booked reserves

27) Sample Answer

Answer 1

Assuming all companies are not in receivership and have not been granted specific exemption by the commissioner:

- A) Prem = 1,500.00 > 1M and loss 1,200,00 > 1M   not small business
  Cost = 10 > min (1% surplus = 9, 3% prem = 45)
  Company A could claim financial hardship and would be exempt
- B) prem = 1,020,000 > 1M and loss = 950,000 < 1M   not small business
  Cost = 20 , min (1% surplus = 22, 3% prem = 30.6)
  Company B is not exempt
- C) prem 830,000 < 1M and loss = 900,000 < 1M   small business
  Cost = 20 < min (1% surplus = 50, 3% prem = 24.9)
  Company C could be exempt because they are a small company having less than 1M $ of prem and loss.

Answer 2

Possible exceptions:
Decreasing - assume none in receivership
LOB - assume comm.. has not issued exception
- Small co (<1M res &<1M prem)
- Fin. Hardship (>1% cap &sur or > 3% prem)

A) 1.5M WP & 1.2M reserves – not small
10/900 = 1.1%   financial hardship; exemption applies
B) 950+70 = 1.02M WP & 900K reserves – not small
20/2200 = 0.9%<1%   &   20/1020 = 1.96% < 3%   no financial hardship; no exemption
C) 830K WP & 900K reserves – small company
Exemption applies

Answer 3

A) if 10 > [1%(900) = 9 or 3%(1500+0) = 45] which 10>9 so yes, qualifies for financial hardship
B) if 20 > [1%(2200 = 22 or 3%(950+70) = 30.6] which it's not; it doesn't qualify under financial hardship; not exempt; it doesn't qualify under small business because (950+70)>1000
C) (800+30) < 1000 and (850+50)<1000 so company is too small; so it's exempt

Examiner's Report

This was a question that required the candidate to know specific details relating to exemptions from the SAO. To achieve full marks, the candidate must know and list out the numeric criteria, apply them correctly and provide the correct conclusion for each company.

Common wrong answers for this question were:

1. Many candidates switched the percentages for the financial hardship test (incorrectly to 3% of capital and 1% of gross written premium) or used a totally different percentage.
2. Incorrect small company exemption criteria. Many only calculated the direct amounts and did not include the assumed amounts. Others used OR instead of AND between the written premium AND loss & LAE reserves criteria.
3. Used the wrong year. As indicated by the question, the most recent year should be used, 2011, instead of the prospective year, 2012.

28) Sample Answer

Part A

Answer 1

$15M is 10% of surplus (10% of 150), which is a fairly high percentage but still within reason. Also, IRIS ratio for ΔPHS says that it's an extraordinary value if the change is < -10% (or > 50%). So 10% of negative (bad) development may cause an unusual value.

Answer 2

10% of PHS = 10% (150M) = 15M

This is a common threshold used because protecting PHS is very important to the solvency of an insurer.

Answer 3

15M = 10% of capital & surplus. A reasonable amount to assume would have a material effect on users decision.

Part B

Answer 1

A materiality standard should not be dependent on the actuaries range; better choice would be % reserve, % surplus, etc.

Answer 2

This is not a valid materiality standard. The range of the actuary is independent of the materiality standard. The company's carried reserves. It should be used to evaluate material risk using the actuary's range as a threshold

Part C

RBC Ratio = 150/70=2.14   140/70=2.00

150-140=10

I'd select 10 million because this would drop them to the company action level. It's better than 15 because 10 is where operations would be impacted by more regulations

Examiner's Report

a. Candidates needed to relate the selected materiality standard of $15 million to another dollar amount. This could have been achieved by relating the amount to total surplus, total reserves, or showing the impact that $15 million would have on the RBC calculation. Candidates,also, needed to incorporate the definition of materiality in some way, either by identifying that the $15 million would be large enough to influence primary/end user's decisions or that this amount would be significant for solvency considerations. If candidates demonstrated the RBC calculations here, we would not give the candidate additional credit here but would give an additional ¼ point in part c if the RBC calculations were not present. An alternative full credit response that several candidates gave which we viewed as not the original intent but valid was that the selection of $15 million was good because that is the -10% of surplus trigger for IRIS ratio 7. Candidates did not need to identify the test as IRIS ratio 7 to receive credit.

b. To receive credit, it was important for the candidate to realize that the actuary's range is not an appropriate criterion to base the materiality standard upon because it will be evaluated against the materiality standard to see if RMAD exists. Candidates often used the actuary's range to justify the selection of $8 million as a reasonable materiality standard. This was not given any credit. If the candidate recognized that management would be more interested or should be more concerned with the high end of the range and suggested that $13 million was better, ¼ point was given for that recognition. It would be very difficult to receive the other ¼ point since ¼ point credit was given for explicitly stating that the materiality standard should not be selected based on the actuary's range. ¼ point of credit could also be achieved by incorporating parts of the definition of materiality that had not been previously stated in part a. Credit could also have been achieved via using the RBC calculations and demonstrating that the $8 million was prudent because one could have risk of material adverse deviation before breaching the company action level and would give management a buffer zone of $2 million to make appropriate management decisions. Full credit was also given for this question if the candidate said the $8 million was not appropriate and listed common materiality standards (% of surplus, % of reserves, amount to breach next RBC level) that should have been used.

c. To receive full credit here, the candidate had to select a precise numeric materiality standard of $10 million since this would cause an RBC level change, acknowledge the RBC impact and explain why it's better than $15 million. The candidate needed to identify that a reduction of $10 million of surplus would put the company into RBC company action level and the use of $15 million as a materiality standard would not recognize the possibility of this material event. Partial credit was commonly received for this question part because most candidates selected a standard and demonstrated the RBC calculations. However, candidates often did not explain why their selected materiality standard was better than $15 million and they would not receive full credit without this. Full credit was not given if the candidate said that their selected standard was more conservative than $15M as this was deemed too ambiguous without more explanation.

29) Sample Answer

Part A

Answer 1

	Gross	Net
Actuary selected	162	71
Company selected	156	68
Company - Actuary #	(6)	(3)

Answer 2

	Net			Gross		
	Low	best	high	low	best	high
Actuary best estimate	71			162		
Company carried value		68			156	
Differences		(3)			(6)	

Part B

Answer 1

Yes. Adverse development has been greater than 5% of PHS in the last 3 out of 5 years. The opining actuary must include description of causes.

2011 5 > .05 (35)=1.75
2010 3 > .05 (41) = 2.05
2009 2 > .05 (33) = 1.9
2008 1 > .05 (35) = 1.75 x
2007 -5 > 30 (.05) = 1.5 x

As you can see, the actuary MUST disclose description of causes.

Answer 2

The test is whether 1 year reserve development to PHS > 5%
This occurs in 2011 (5/35 = 14%), 2010 (3/41 = 7%), 2009 (2/38 = 5%)
Since it occurs in 3 or more out of the last 5, the actuary must discuss the causes.

Examiner's Report

The four common errors for Part A were:

- Not showing summary numbers (i.e. copying the table onto the page without computing totals)
- Forgetting to include the UEPR in the totals shown
- Showing only net or gross, as opposed to both set of numbers
- Not showing a difference between the actuary's estimate and the company's carried reserves.

The common errors for Part B were:

- Not demonstrating knowledge that ratios must be calculated for 5 years

- Not understanding the development is the current year (2007 through 2011) and the surplus is the prior year (2006 through 2010)
- Not demonstrating knowledge that the pass/fail criterion for each test is development in excess of 5% of surplus.

30) Sample Answer

Answer 1

A) Contract 1: no, there is not timing risk. There must be both underwriting and timing risk.
Contract 2: yes, the risk transfer is substantially all; this is an exception.
B) Contract 1: modify it to eliminate the repayment date. Losses will be paid 30 days after primary insurer pays out the losses.

Answer 2

A) Contract 1: would not because it does not include timing risk (all losses would be paid on 12/31/13).
Contract2: would because substantially all of the insurance risk is being ceded to the reinsurer.
B) Contract 1 could be modified so that all losses are reimbursed to the ceding company within 30 days of when they are paid by the insured.

Examiner's Report

Common Part A mistakes:

1. Stating that Contract 1 would qualify for reinsurance accounting under the substantially all exception. This is not correct, as the company writes homeowners policies that cover more than just earthquake losses. To qualify for the substantially all exception the reinsurer would need to be in the position of the insurer.

2. Stating that Contract 2 would not qualify for reinsurance accounting as there is no insurance risk to the insurer. This is not correct, the question of insurance risk applies to the reinsurer not the ceding company. In addition, this contract does qualify under the substantially all exception.

Common Part B mistakes:

Changing Contract 1 to pay losses incurred in 2013 without addressing the payment date.

31) Sample Answer

Part A)

The question first asked to "identify two terms in the contract above that would cause MOST concern from a risk transfer perspective." Many candidates offered answers that could cause concern from a risk transfer perspective, but the contract terms causing most concern were:

- the loss ratio cap and
- the presence of an automatic commutation clause.

Examiner's Report

Some common wrongly identified concerns were:

- subject premium being too high/low
- reinsurance expenses being too high/low
- ceding commissions being too high/low

Some candidates identified the "maintenance fee" as one of the concerning terms. The maintenance fee is not the term that one should be most concerned about. The concerning part is the automatic commutation that will result if the maintenance fee is not paid. However, because the maintenance fee is connected to the automatic commutation provision, credit was given for identifying the concerning contract term.

The question then asked to "briefly explain the cause for concern." The causes of concern were as follows:

- Loss Ratio Cap: limits the reinsurer's underwriting risk and therefore limits risk transfer. Probability distributions could exist that, along with a LR cap of 100%, could prevent the reinsurer from assuming significant risk.
- Automatic Commutation Clause: limits the underwriting risk OR limits the timing risk and therefore limits risk transfer. The underwriting risk is limited as, if commuted, adverse development in the tail would no longer be the reinsurer's responsibility. If there is insufficient underwriting risk in the first 4 years, the reinsurer could be prevented from assuming significant risk. The timing risk is limited as, if commuted, the possibility of payments after 4 years is eliminated. If there isn't sufficient variability for loss payments in the first 4 years, the reinsurer could be prevented from assuming significant risk.

Examiner's Report

Some common incorrectly explained causes for concerns were:

- The reinsurer is guaranteed a profit. This is wrong because the maximum loss ratio of 100% would result in an underwriting loss.
- There is no risk transfer. This is wrong because the question does not give enough information to prove if there is or isn't sufficient risk transfer.
- Must reflect the maintenance fee in the calculation of risk transfer. While the maintenance fee does need to be reflected in the calculation of risk transfer, this is a relatively small concern.

Part B)

The question asked the candidate to "discuss the type of interest rate used when discounting cash flows". Credit was given for mentioning 2 discussion points from the following:

- Risk free rate
- Constant across all scenarios
- Constant between premiums and losses (primary/reinsurer)
- Constant over all time periods
- Portfolio rate (despite indicating this is a bad choice, the Freihaut&Vendetti paper did agree this could be used and is used by many insurers)
- Should not reflect investment risk
- Should not reflect a particular company's investment appetite
- Duration matched
- Appropriate/reasonable
- Accurately identifying the relationship between various interest rates and whether they overdetect/underdetect risk transfer

Examiner's Report

Common incorrect discussion points concerning the interest rate:

- Consistent with IRS discounting
- Use the company's cost of capital