

EXAM 6 – UNITED STATES, FALL 2013

19. (4.25 points)

The following provides the statutory balance sheet as of December 31, 2012 for a monoline insurer that writes annual homeowners policies without reinsurance protection (all figures are in thousands of dollars):

<u>ADMITTED ASSETS</u>	
Bonds	615
Cash, cash equivalents and short-term investment	30
<b>TOTALS</b>	<b>645</b>
<u>LIABILITIES, SURPLUS AND OTHER FUNDS</u>	
Losses	50
Unearned premiums	550
Total liabilities	600
Surplus as regards policyholders	45

Additional company information is below:

- The company had \$100,000 in revenue each month in 2012, which included \$96,000 in premium and \$4,000 in payment plan service fees.
- Policies are written evenly throughout each month.
- The company calculated earned premium as follows (all figures are in dollars):

<u>2012 Month</u>	<u>Written Premium</u>	<u>Earned Fraction</u>	<u>Earned Premium</u>
Jan	100,000	12/12	100,000
Feb	100,000	11/12	91,667
Mar	100,000	10/12	83,333
Apr	100,000	9/12	75,000
May	100,000	8/12	66,667
Jun	100,000	7/12	58,333
Jul	100,000	6/12	50,000
Aug	100,000	5/12	41,667
Sep	100,000	4/12	33,333
Oct	100,000	3/12	25,000
Nov	100,000	2/12	16,667
Dec	100,000	1/12	8,333
<b>TOTAL</b>	<b>1,200,000</b>		<b>650,000</b>

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19. (continued)

- The company holds the following bonds as of December 31, 2012 (all figures are in thousands of dollars):

NAIC Bond Rating	Amortized Cost	Fair Value	Balance Sheet Value
1	650	600	600
2	10	15	10
4	10	5	5

- Over the last few years, the company's losses have been quite volatile. Still, management and the company actuary believe that sufficient assets are carried to maintain solvency for the company's desired risk profile.

a. (1.5 points)

Identify and briefly describe three items in the information provided above that are inconsistent with Statutory Accounting Principles (SAP). Assume no revenue is recognized in 2012 from policies written in prior years.

b. (1.75 points)

Calculate the insurer's policyholders' surplus in accordance with SAP as of December 31, 2012.

c. (0.5 point)

Briefly describe two possible reasons, using the information provided, that this insurer might purchase reinsurance.

d. (0.5 points)

Provide one objection the regulator may have to using fair value as a bond valuation method, and recommend an alternative method.

## 18. Examiner's Report

- a. Part a of this question involved some very straightforward calculations (EP, incurred loss, change in UEPR, investment gain, etc) and some more challenging calculations (reserve discount, tax-exempt portion of bonds, etc). Common errors included:
- Only including the Incurred Loss from Accident Year 2012 (32,000 instead of 48,000)
  - Policyholder dividends is part of Other Income, it is not part of Underwriting Income or Investment Income
  - Change in Unrealized Capital Gains is a direct charge to surplus and is not to be considered in the Income Calculation
  - Using the Unearned Premium Reserve instead of the Change in the Unearned Premium Reserve (45,000 instead of 5,000)
  - Incorrectly calculating the beginning and/or ending reserves
  - The indirect method uses the change in the reserve discount while the direct method uses the change in discounted reserves
  - Policyholder dividends is part of Regular Taxable Income
  - Many candidates did the maximum (RIT, AMIT) – credit versus maximum(RIT – credit = ARIT, AMIT)
  - A few candidates interpreted “net income” to mean “net of reinsurance” rather than “net of taxes”. However, the syllabus is very clear about what net income means: the annual statement and specifically the statement of income, line 20 says “Net Income”, line 19 is federal and foreign income taxes, and line 20 includes line 19.
- b. Although this part was more open-ended, a variety of considerations could be listed, and most candidates were able to do so. Instead of briefly describing, many candidates only provided a list, which received partial credit.

## 19. Sample Answers

a.

### Sample 1

- The \$4K of pmt plan service fees does not get included in premium
- If policies are written evenly through month, then January should have been weighted 23/24, Feb 21/24 ... Dec 1/24
- NAIC Bond 1 should be carried at amortized cost = \$650

### Sample 2

- Plan Service fee should be put under other income rather than added to written premium
- Earned premium calculation is incorrect. For example the earned premium fraction for Jan should be  $1/24 + 11/12 = 23/24$  rather than  $12/12$
- NAIC bond rating 1 should be recorded as amortized cost rather than fair value

### Sample 3

- Payment plan service fee should not be part of premium calculation
- The way EP is calculated, earned function should consider mid-month
- Bonds:  $650 + 10 + 5 \rightarrow$  Bond Rating 1 should use amortized cost

### Sample 4

- 4000 in payment plan service fees should not be included in premium
- The earned premium allocation method is incorrect; should be 23/24 for Jan, etc. using monthly pro rata.
- Bond NAIC 1 s/b amortized cost of 650

Sample 5

- Payment Plan fees are other income (not Earned Premium revenue)
- EP calculation – only 23/24 of Jan WP is earned in 2012, 21/24 of Feb is earned, etc.
- Bond Class 1 should be at amortized cost (650)

b.

Sample 1

Admitted Assets

$$\text{Bonds} = 650 + 10 + 5 = 665$$

$$\text{Cash} = 30$$

$$\text{Total Assets} = 695$$

$$\text{Earned Premium} = 96 (23 + 21 + \dots + 1)/24 = 576$$

$$\text{UEP} = 96 \times 12 - 576 = 576$$

Liabilities

$$\text{Losses} = 50$$

$$\text{UEP} = 576$$

$$\text{Total Liab} = 626$$

$$\text{Surplus} = 695 - 626 = 69$$

Sample 2

$$\text{Assets} = (650+10+5) + 30 = 695$$

$$\text{Liabilities} = 96 (1/24 + 3/24 + 5/24 + 7/24 + 9/24 + 11/24 + 13/24 + 15/24 + 17/24 + 19/24 + 21/24 + 32/24) + 50 = 626$$

$$\text{Surplus} = \text{Asset} - \text{Liability} = 695 - 626 = 69$$

Sample 3

Asset

$$\text{Bond} = 650+15+5 = 665$$

$$\text{Cash} = 30$$

$$\text{Total} = 695$$

Liab

$$\text{Liab} = \$50$$

$$\text{UEPR} = 576 = 96,000 \times 12 \times 0.5$$

$$\text{Total} = 626$$

$$\text{Surplus} = 69$$

Sample 4

$$\text{Fixed Policyholder Surplus} = 45 + 50 (\text{Change in Bonds}) - 26 (\text{Change in UEPR}) = 69$$

Sample 5

WP – 96,000 (12) = 1,152,000  
EP = 23/24 (96,000) + ... 1/24 (96,000) = 576,000  
UEPR = 576,000  
Surplus = 650 + 10 + 5 + 30 – 50 – 576 = 69

c.

Sample 1

- Losses have been volatile --> reinsurance can be used to stabilize losses
- Writes homeowners so exposed to cat risk --> reinsurance can offer cat protection

Sample 2

- GWP/PHS = 1200/69 = 1739% --> unusual IRIS ratio
- Homeowners insurance is exposed to catastrophe loss thus the insurer should buy reinsurance to protect

Sample 3

- to stabilize loss experience
- to provide cat loss protection since its HO monoline insurer

Sample 4

- Losses have been volatile
- GWP:PHS = 1,152,000 / 69,000 = 16.7 > 900%, so there is too much risk relative to PHS

Sample 5

- Provide surplus relief (high prem:surplus)
- Stabilize loss experience

Additional acceptable responses (any 2 of the following):

- Share Large Risks with Other Insurers – company has a very high premium to surplus ratio
- Reduce Net Liability appropriate to Financial Resources
- Expand Capacity
- Seek Guidance from Reinsurers
- To reduce the impact of large losses
- To increase market share (expand capacity)

d.

Sample 1

- Fair value doesn't adequately reflect the price of the bond
- a better method would be to use min of (amortized costs, fair value) because this is conservative and regulators using SAP want conservatism

Sample 2

- Objection: Fair value doesn't accurately measure historical cost
- Alternative: Amortized cost more accurate

Sample 3

- Insurer usually holds bond until maturity so fair value just introduces more volatility to the evaluation

- should use NAIC valuation and make it consistent

#### Sample 4

- It results in volatility in PHS
- Amortized cost or the lower of Amortized Cost and Face Value may be preferable

#### Sample 5

- Not accurate if now selling now, Volatile
- Amortized cost if holding to maturity

#### Additional acceptable regulator objections:

- Not Verifiable
- Too optimistic/Not Conservative
- Not Liquid
- Not Conservative enough
- More ambiguity
- Overstate or Understate
- Lack of Transparency
- Might fail to pay at the end

#### Additional acceptable alternatives:

- Original Purchase Price Less Depreciation
- Actual Purchase Price
- Face Value
- Average of Fair Value and Amortized
- Book Value
- Average of Face Value and Amortized
- Par Values
- Historical Value/Historical Cost
- Investment Grade Should be Amortized
- Securities Valuation Office (SVO) Value
- Amortized or Fair based on Bond Quality
- Categorize Bonds by Expected Time Held/GAAP Method

### 19. Examiner's Report

- a. This part was straightforward. The most common error was to discuss that service fees were expensed immediately. The answer needed to make it clear that service fees were not part of written and earned premium. Other common errors were to state the problem but not explain how to correct it.
- b. Candidates needed to calculate surplus incorporating the 3 corrections from Part A. Candidates could calculate surplus as assets minus liabilities or original surplus plus the change in assets less the change in liabilities. Common errors included the handling of service fees. Service fees were added to assets, left in written premium and added to earned premium. Some candidates included additional items in their calculation of liabilities and assets.
- c. This was very straightforward and candidates generally received full credit for this part.

- d. The first piece of this question is to explain why a regulator might not accept the use of Fair Value, and many answers were possible. Stating that it should be amortized is not a reason. Another common error was to state that bonds are held to maturity without explaining why Fair Value was not acceptable.

The second part was to recommend another valuation method that the regulator may accept, which is similarly open-ended and many alternatives were possible. However, valuations were not accepted that would not be better than Fair Value in the regulator's viewpoint. Most candidates responded with SAP and GAAP methods.

## 20. Sample Answers

a.

### Part 3E

Subtract the 2004 column from each of the prior and 2003 rows:

$$(479 + 785) - (479 + 785) = 0$$

$$(718 + 972) - (479 + 785) = 426$$

$$(832 + 1,074) - (479 + 785) = 642$$

	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>
Prior	N/A	0	239	353
2003	N/A	0	187	289
New Prior	XXX	0	426	642

The 2004 accident year numbers are the same from the provided data table.

### 2013 Part 3E

	<u>2004</u>	<u>2005</u>	<u>2006</u>
Prior	0	426	642
2004	412	801	989

### Part 2E

Subtract the original table for Part 3E from the table for Part 2E to calculate the reserves. Add the prior and 2003 rows to calculate the 2013 Part 2E prior year reserves.

	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>
Prior	N/A	597	388	317
2003	N/A	499	241	130
New Prior	XXX	1,096	629	447

Add the 2013 Part 3E prior year paid to get the total incurred prior year row:

$$(1,076 - 479) + (1,284 - 785) + 0 = 1,096$$

$$(1,106 - 718) + (1,213 - 972) + 426 = 1,055$$

$$(1,149 - 832) + (1,204 - 1,074) + 642 = 1,089$$

The 2004 accident year numbers are the same from the provided data table.