19. (2.25 points)

Given the following information as of December 31, 2016:

Accident Year	Cumulative Reported Claims ($000) as of (months)			
	12	24	36	48
2013	10,000	15,000	18,000	19,800
2014	11,000	16,500	19,800	
2015	12,650	18,975		
2016	14,500			

Accident Year	Cumulative Paid Claims ($000) as of (months)			
	12	24	36	48
2013	4,000	10,000	15,000	18,000
2014	4,400	11,000	16,000	
2015	4,840	12,100		
2016	5,324			

Accident Year	Reported Claims Development Technique Ultimate Claims ($000)
2013	20,790
2014	22,869

a. (1 point)

Calculate the ultimate claims for accident years 2015 and 2016 as of December 31, 2016, using the reported claims development technique.

b. (0.5 point)

Produce a diagnostic that shows an operational change in the insurer's history. Briefly describe a scenario that could result in the observed diagnostic.

c. (0.75 point)

Briefly describe an issue that could arise for each of the following parties that relies on accurate unpaid claims estimates if unpaid claims are understated by the insurer.

i. Investors
ii. Regulators
iii. Internal management

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QUESTION 19

TOTAL POINT VALUE: 2.25 | **LEARNING OBJECTIVES: B1, B2, B3**

SAMPLE ANSWERS

Part a: 1 point

Sample 1

Reported Link Ratios

AY	12-24	24-36
2013	1.5	1.2
2014	1.5	1.2
2015	1.5	

36-ult = 22869/19800 = 1.155

LDF	12-24	24-36	36-ult
Age-to-age	1.5	1.2	1.155
Age-to-Ult	2.079	1.386	1.155

2015 ult = 18,975,000 * 1.386 = 26,299,350
2016 ult = 14,500,000 * 2.079 = 30,145,500

Sample 2

All year weighted average used to calculate LDF's:

12-24	24-36	36-48	48-ult
1.5	1.2	1.1	20790/19800 = 1.05

12-ult	23-ult	36-ult	48-ult
2.079	1.386	1.155	1.05

Ult claims for AY2015 = 18,975 * 1.386 =26,299.4
Ult claims for AY2016 = 14,500 * 2.079 = 30,145.5

Part b: 0.5 point

Sample 1

Cumulative Paid on Reported

AY	12	24	36	48
2013	0.4	0.667	0.833	0.9091
2014	0.4	0.667	0.808	
2015	0.3826	0.638		
2016	0.3672			

Case reserve adequacy has increased.

Sample 2

Cumulative Paid on Reported

AY	12	24	36	48
2013	0.4	0.667	0.833	0.9091
2014	0.4	0.667	0.808	
2015	0.3826	0.638		
2016	0.3672			

From the paid-to-reported claim ratios above, we can see it decreased from year 2015. The company may have applied tighter claims rules from 2015.

Part c: 0.75 point

Sample 1

i) Investors will be given overstated profit so that potential investors will invest in the company based on overstated profit

ii) Regulators may limit the target profit to lower target based on the overstated profit

iii) Internal management may take wrong expanding decisions based on the overstated profits

Sample 2

i) Regulators could think business is more profitable than it truly is, hence invest more money and in fact they wouldn't if they knew the true profit

ii) Regulators won't come in to help if the insurer is insolvent as they don't know the inadequacy in reserves

iii) Management won't take measures to improve performance as they think the business is still on track.

EXAMINER'S REPORT

Candidates were expected to understand how to develop ultimate losses using triangles, how triangles can be used as a means to identify internal/operational changes, and how under-reserving could impact different aspects of a company.

Part a

Candidates were expected to know how to calculate ultimate losses for 2015 and 2016 based on reported losses triangles.

Common errors included:

- Applying LDFs to paid losses to calculate ultimate losses
- Not including a tail factor (some assumed tail factor to be 1)

Part b

Candidates were expected to produce a triangle of paid/reported ratio, to identify the lowering ratios, and to understand why such a situation could happen.

Common errors included:

- Producing the right diagnosis (lower settlement rate), but providing a wrong scenario (weakening case reserve strength)
- Producing a case reserve triangle to show reserve strengthening

Part c

Candidates were expected to demonstrate consequences of under-reserving on people in different roles.

Common errors included:

- Confusing regulators with credit agencies, and provided answers that the regulators would "downgrade", "de-grade" the company
- Providing answers that were logically wrong (e.g. investment return looked better than it actually is so investors might leave)
- Providing answers that were vague (e.g. investors will be unhappy)
- Discussing the importance of having appropriate reserve estimates as opposed to the issues of having understated reserves