21. (2 points)

Given the following information as of the December 31, 2011 actuarial valuation:

Accident Year	Ultimate Claims	Reported Claims	Paid Claims
2010	$1,200	$280	$125
2011	$1,300	$125	$75
Total	**$2,500**	**$405**	**$200**

Age in Months	Cumulative Percent Reported	Cumulative Percent Paid
36	40%	12%
24	25%	10%
12	10%	5%

Given the following information as of December 31, 2012:

Accident Year	Reported Claims	Paid Claims
2010	$470	$200
2011	$320	$175
Total	**$790**	**$375**

a. (0.5 point)

Based on the 2011 actuarial valuation, calculate expected paid claims for each accident year during calendar year 2012.

b. (0.5 point)

Based on the 2011 actuarial valuation, calculate expected reported claims for each accident year during calendar year 2012.

c. (0.5 point)

Discuss a scenario that explains any differences between actual and expected paid and reported claims as of December 31, 2012.

d. (0.5 point)

Using the scenario discussed in part c. above, justify the selection of a reserving technique for estimating ultimate claims as of December 31, 2012.

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Exam 5 Question #21

a.	Ultimate-Paid	% unpaid	developed in CY 2012
2010	1075	90%	$(1075/(.9))(12\% - 10\% = 23.89$
2011	1225	95%	$\left(\frac{1225}{.95}\right)(.1 - .05) = 64.47$

OR

Yr	Ult Paid	% pd	%pd age+12	% pd in age	EXP paid in 2012
2010	1200	.1	.12	.02	24
2011	1300	.05	.1	.05	65
	(1)	(~)	(3)	(3)-(2)	89

OR

Expected paid claims in CR 2012

- AY 2010= 125 $(\frac{1}{.10} \div \frac{1}{.12} - 1 = 25$
- AY 2011= 75$(\frac{1}{.05} \div \frac{1}{.1} - 1 = 75$

b.

	Ultimate-Reported	% unreported	
2010	920	.75	$\left(\frac{920}{.75}\right)(.4 - .25) = 184$

2011 1175 .9 $\left(\frac{1175}{9}\right)(.25-.1)=195.83$

OR

YR	ULT rpd	%rpd	% rpd age+12	%rpd in age	exp 2012
2010	1200	.25	.4	.15	180
2011	1300	.1	.25	.15	195
	(1)	(2)	(3)	(3)-(2)	375

OR

Exp. Rptd claim in CY 2012

- AY 2010 = $280\left(\frac{1}{.25}\div\frac{1}{.4}-1\right)=168$
- AY 2011= $125\left(\frac{1}{.1}\div\frac{1}{.25}-1\right)=187.5$

c. As of 12/3//12:

Reported	Paid
280+184=464	125+23.89=148.89
125+195.83=320.83	139.47
=Close to actual	= much lower than actual

The higher actual paid can be a result of speed up in the claim settlement.

OR

Increase in rate of claim settlement. The reported losses tracked quite close to expected, while the paid losses were much larger than expected.

OR

Reported claims expected are less than actual, so are paid claims. They could be understated due to change in the mix of business towards business with worse claim experience.

d. The actuary can use the reported development technique because the projected vs. actual development was very close, and it is not as affected by the speed up in claim settlement as the paid claim dev. method.

OR

I would use a reported dev. technique as it is not affected by decrease in settlement lag.

OR

I would suggest using the expected claims technique because you can judgmentally adjust the expected claims ration up due to the shift.

a. Most candidates performed well , either applying the formula from the Friedland text or another reasonable estimation technique of expected loss emergence.

b. Most candidates performed well , either applying the formula from the Friedland text or another reasonable estimation technique of expected loss emergence.

c. Many candidates skipped this part. Some candidates focused on explaining the relatively minor difference in emerging reported losses while overlooking the more drastic difference in paid loss emergence. Other candidates described a scenario that would only partially explain the results derived in part a. and part b. Other candidates described scenarios that would result in the *opposite* results from those seen in part a. and part b., reversing the actual and expected losses. These responses generally received partial credit.

d. Many candidates skipped part d. No credit was given for simply stating a reserve technique, as the question required the candidate to justify the technique. Some responses failed to link the response back to the scenario described in part c. as the question required.

22.

a. Many candidates did not include a detailed discussion of how the changes in retention and / or risk profile would affect the data. Some candidates did not recognize that the actuary was working for a self insured client and not an insurance company; in these cases, some candidates said premium should be adjusted to current rate level, but the actuary would not have premium to use as an exposure base for the self-insured layer.

b. Again, some candidates said premium should be adjusted to current rate level; however the actuary in the question would not have access to premium information for the self-insured layer.

c. Some candidates discussed the need to review the data for changes in frequency and severity, but failed to identify diagnostics that could be used to test for changes.

23.

a. A majority of the candidates received full credit on this part. When there were errors, the most common was calculation errors in the Acc Year 2010 at 24 months despite correct answers elsewhere in the final triangle.

b. Many candidate provided answers that were factually correct but did not fully explain the issue at hand and/or the mechanics of the adjustment.

24.

a. Most candidates received full credit. In limited cases, there were mathematical errors or no final calculation of the ultimate paid S&S.