22. (3 points)

An actuary is assisting a manufacturing company in reserving its self-insured workers compensation program as of December 31, 2012. The program began on January 1, 1998 and has undergone the following changes in recent years:

- On January 1, 2007, the per-occurrence retention was increased from $300,000 to $750,000.
- On January 1, 2010, the company automated some of its production process. As a result, the company replaced a significant portion of its assembly-line staff with sales staff.

The actuary would like to use the following methods and data to estimate ultimate claims as of December 31, 2012:

- Development method using company-specific claim development triangles.
- Expected claims method using payroll as exposure base and the average of the reported and paid claim development projections as initial estimates of ultimate claims.
- Frequency-severity method using company-specific claim count development triangles.

a. (1 point)

Discuss necessary adjustments the actuary should make to the company-specific data to use the development method.

b. (1 point)

Briefly describe four adjustments the actuary should consider making to historical claims and exposures to put them on current levels in the expected claims method.

c. (1 point)

Describe two diagnostic tests the actuary should perform before using the frequency-severity method.

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Exam 5 Question 22

a. If possible, the actuary should restate the historical triangles to a $300k retention (one triangle) and to a $750K retention (a separate triangle) in order to remove the distortion that the change in retention would otherwise create. The actuary should then review these triangles separately and select LDFs to be applied to the appropriate retention by year.

Or

The actuary should adjust the claims data to be used in development method since the retention was increased from $300,000 to $750,000. The increase in retention will increase the claims reported and paid. Therefore, claims data before 2007 should be adjusted to current level before applying the development method. In addition, the change from assembly-line to sales will have an impact to the claims. Less injury will be expected when the company automated some of its production process. Hence, claims data before 2010 should be adjusted.

b. -Adjust the losses so they are on the 750,000 retention level by using ILFS.
-Adjust losses to account for the change in workers. Sales staff will have fewer losses (injuries) than assembly staff
-Adjust the exposures to account for inflation.
-Adjust the losses to account for benefit changes related to inflation. As the workers get raises, the losses will increase.

OR

1. Cap the historical claims, select large loss load

2. Apply loss trend

3. Apply benefit level change adjustment

4. Apply exposure trend

c. Look at the avg severity amount → claims/closed counts. The change in per occurrence retention could have an effect on severity.

-Look at frequent triangle → claims/exposures. Change in production could have significant increases on frequency.

OR

1. Paid to reported claim counts to determine if there were any changes in claim settlement rate.

2. Average case outstanding per open claim to see if there were any changes in case outstanding adequacy.

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.