

19. (1.5 points)

One year ago, an automobile insurer implemented a mobile claims reporting platform. The company anticipated that this would lead to shorter reporting patterns.

Since the mobile platform was implemented, the company has identified a shift in mix of business towards younger drivers, with younger drivers having a higher loss cost than older drivers.

Evaluate the effect on the IBNR estimated using each of the following techniques if no adjustments are made:

- i. Development Technique
- ii. Expected Claims Technique
- iii. Cape Cod Technique

## EXAM 5 FALL 2018 SAMPLE ANSWERS AND EXAMINER'S REPORT

<b>QUESTION 19</b>	
<b>TOTAL POINT VALUE: 1.5</b>	<b>LEARNING OBJECTIVE(S): B4</b>
<b>SAMPLE ANSWERS</b>	
<p><i>i. Development technique:</i></p> <p><u>Sample 1:</u> IBNR would be overestimated as the mobile platform has a shorter reporting pattern and thus requires the selection of lower LDFs for the latest AY.</p> <p><u>Sample 2:</u> Overstates IBNR. Development technique will apply higher loss development factors based on historical data (prior to implementing mobile reporting platform), to higher reported claims based upon latest mix shift to higher loss cost drivers if the change in reporting pattern is not considered.</p> <p><u>Sample 3:</u> Assume that it is true that reporting patterns are shorter and loss costs higher, but no adjustments are made for these changes. IBNR will be overstated since it is based on old, higher LDFs than should be selected under the new, shorter reporting patterns. With higher loss cost due to mix shift, the impact is further amplified.</p> <p><i>ii. Expected claims technique:</i></p> <p><u>Sample 1:</u> No effect on IBNR if the premium paid for both young and old drivers are adequate and accurate; expected claim technique not affected by any changes in reporting pattern</p> <p><u>Sample 2:</u> The change in reporting pattern does not affect expected claims technique. If young and old drivers are correctly priced it should not change the ECR, so this method is accurate (losses higher for younger drivers, but so is associated premium).</p> <p><u>Sample 3:</u> Accurate – assuming premium charged for both loss cost levels is adequate, this method should not be impacted by mix shift. If that is not the case, and premium charged for youthful drivers is inadequate, this method has the potential to understate actual IBNR due to the shift towards higher loss cost drivers.</p> <p><i>iii. Cape Cod technique:</i></p> <p><u>Sample 1:</u></p>	

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Overstates IBNR, but the effect is less than the development technique; overstatement is due to higher % unreported from development technique without considering the change (speed up) in reporting pattern.

### Sample 2:

This method will be affected by the LDFs which are too high without adjustment for the new reporting pattern, but to a lesser extent than the dev method. If policies are correctly priced, then premium component of this method will be unaffected and ECR not impacted. In total – the method will overstate IBNR because the LDFs which are too high, will lead to a % unreported which is too high.

### Sample 3:

CDF's will be too high, which leads to lower used up earned premium, which leads to a higher ECR for the latest AY and in total across AYs. Higher ECR -> Higher expected claims -> Higher expected unreported claims as both % unreported is higher from inflated cdf's and expected claims are higher -> overstated IBNR

## EXAMINER'S REPORT

The candidate was expected to demonstrate knowledge with respect to the following:

- Assessing the influence of operating changes and distributional shifts in mix of business on the estimation of unpaid claims
- When the development technique works/does not work as well as how the technique is implemented
- When the expected claims technique works/does not as well as how the technique is implemented
- When the Cape Cod technique works/does not as well as how the technique is implemented

Candidates were expected to recognize that there are two changes taking place - a change in reporting pattern and a shift in mix of business - and to then to address the impact on IBNR if no adjustments are made to account for these changes. This means addressing impacts for each of the three techniques in question, and providing directional impact or lack thereof for each of the techniques accompanied by support for the stated impacts.

Common mistakes include:

- Simply stating a directional impact without providing any support
- Failure to identify correct directional impact from the changes
- Simply stating IBNR would be impacted or generalizing that a method would not account for changes appropriately
- Focusing on a single change and ignoring the fact that two changes are taking place

Common mistakes for part ii. Include:

- Failure to differentiate between *loss cost* impact and *loss ratio* impact, ignoring the premium component of this technique.

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Common mistakes for part iii. Include:

- Simply stating that this method is a weighted average of the development technique and expected claims technique, without demonstrating real knowledge of the method, stating directional impact to IBNR or providing support for that impact.