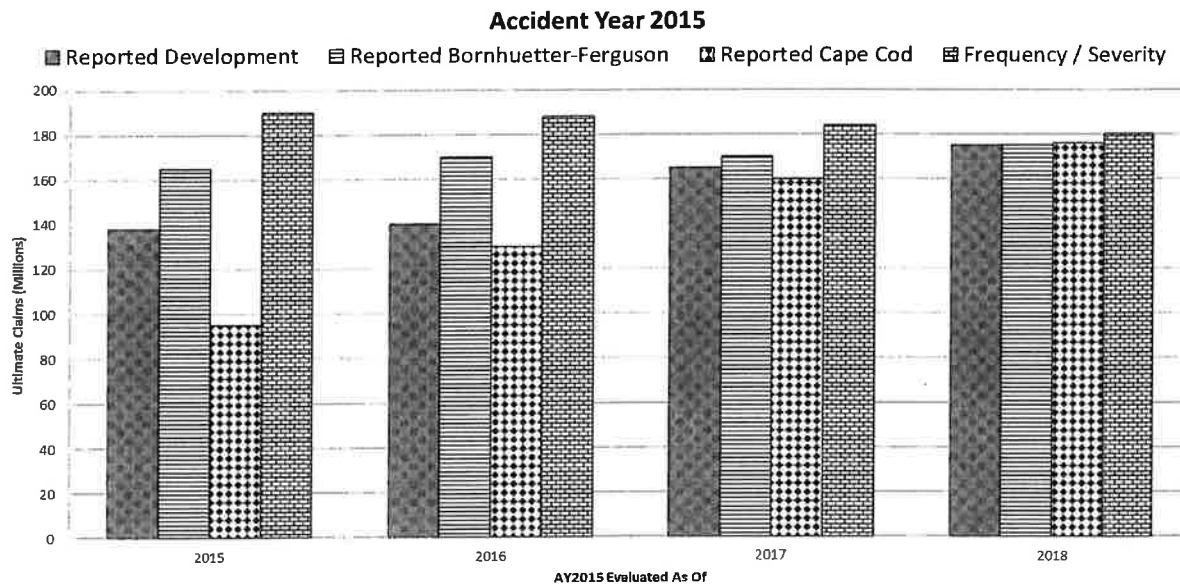


23. (2 points)

Given the following information for accident year 2015:



- Tort reform enacted January 1, 2015, resulted in a drastic increase in severity.

Discuss the year-over-year progression of each technique in response to the law change.

**FALL 2019 EXAM 5 – SAMPLE ANSWERS AND EXAMINER’S REPORT**

<b>QUESTION 23</b>	
<b>TOTAL POINT VALUE: 2</b>	<b>LEARNING OBJECTIVE(S): B8</b>
<b>SAMPLE ANSWERS</b>	
<p><u><i>Sample Responses for Reported Development Method</i></u></p> <ul style="list-style-type: none"> <li>• Historical loss development factors were too low. With the increase in severity, the estimate as of 2015 was too low. As more data at new severity levels become available, loss development factors increased, and so did estimates of ultimate.</li> <li>• With no modification for tort reform in development factors, we expect to see large upward swings year-over-year as the higher severity is added to reported losses subsequent to 2015. We do see a near \$20M jump from 2016 to 2017 from this.</li> <li>• Relies on calculating age to age and age to ultimate factors for loss development. A drastic increase in severity will flow through into loss triangles, but it will take time to fully be recognized. This is why ultimate claims increase each year until they eventually level out.</li> </ul> <p><u><i>Sample Responses for Bornhuetter-Ferguson Method</i></u></p> <ul style="list-style-type: none"> <li>• Looks stable, but increases slightly. Stable because the expected claims ratio would have been selected to incorporate increase in severity. The actual claims portion would not change. Reported estimate would get higher over time and when weighted together, cause a slight increase in ultimate losses.</li> <li>• This method is a credibility weighting of expected and development. Since the method doesn't give a lot of weight to immature years, you could incorporate the expected increase in severity in your selection of an expected loss ratio, causing the method to be more stable over time.</li> <li>• Uses reported losses and combines that with an expected claims ratio times earned premium times percent unreported. Since we can choose the expected claims ratio, we can have that part increase immediately to react to the higher severity. However, the initial reported losses may not have fully been affected by tort reform changes right away, so that's why reported B-F method still needs to increase slightly each year until 2018.</li> <li>• B-F is in between the frequency/severity and reported development methods because it is a credibility weighting of the development and expected methods. Development method is under projected while the expected looks like it is adjusted for the severity change.</li> </ul> <p><u><i>Sample Responses for Reported Cape Cod Method</i></u></p> <ul style="list-style-type: none"> <li>• Uses historical data to calculate expected claims ratio which would have been too low. This weighted with the low reported estimate would have resulted in a very low estimate initially. As more data increases loss development factors and the expected claims ratio, estimate increases.</li> <li>• Considers experience in selecting an expected claims ratio. As such, at an early maturity this method may be relying too much on prior experience, with the lower severity. This causes this method to increase significantly as higher severity experience comes in.</li> <li>• With no modification to historic loss ratios for tort reform, we should also see large upward increase in estimates year-over-year as the higher severity slowly enters both the</li> </ul>	

## FALL 2019 EXAM 5 – SAMPLE ANSWERS AND EXAMINER’S REPORT

actual and the historic loss ratios. However, because historic loss ratios will continue to be lower, there should be the most movement here, which we observe with roughly \$20M increases in estimates each year.

- Least responsive as the a priori has taken experience from the historical years and does not take into account the tort reform.

### Sample Responses for Frequency/Severity Method

- When severity of claims changed, the result would have been most immediately captured in the estimate using this technique. While it overestimates the ultimate claims slightly, we see that it is closest when compared to the ultimate claims at 2018.
- This technique is able to directly account for severity trend changes so it is one of the most accurate estimates at early ages.
- Allows for assumptions about external environment, inflationary trend, and claims handling practice to be incorporated easily. This allowed for the method to react right away to the increased severity.
- The technique backs out frequency and severity separately and then adjusts each individually for changes such as the severity increase due to tort reform. By adjusting severity separately, this technique can respond quickly to the severity increase, which is shown by the highest ultimate claims in each year.

### **EXAMINER’S REPORT**

Candidates were expected to understand both the mechanics and assumptions of the four techniques illustrated to develop ultimate claim estimates, and understand the effect of tort reform changes on each of the estimation techniques over time.

Common mistakes included:

- Stating direction of change in ultimate losses in a method without further explanation.
- Stating a method was responsive/not responsive to tort reform without further explanation.
- Stating expected claims ratio was unaffected by tort reform in B-F method without further explanation.
- Confusion in a priori expected claims ratio used in B-F method versus Cape Cod method.
- Stating the reported development technique doesn’t take tort change into account without further explanation.
- Defining each method without explaining impact of the tort reform.