

4. (2.5 points)

Given the following information for an insurance company that sells claims-made policies:

- Exposure levels are constant.
- Loss costs increase by 3% each report year.
- An equal number of claims are reported each year.
- All claims are reported within four years of occurrence.

| Report Year | Loss Cost by Report Year Lag | | | |
|-------------|------------------------------|-----|-----|-----|
| | 0 | 1 | 2 | 3 |
| 2014 | 100 | 100 | 100 | 100 |
| 2015 | 103 | 103 | 103 | 103 |
| 2016 | 106 | 106 | 106 | 106 |
| 2017 | 109 | 109 | 109 | 109 |
| 2018 | 113 | 113 | 113 | 113 |

a. (0.75 point)

Demonstrate and briefly explain why a claims-made policy will cost less than an occurrence policy.

b. (1 point)

Demonstrate and briefly explain whether a claims-made policy or an occurrence policy would be more underpriced if the actual loss cost trend by report year is 10%.

c. (0.75 point)

Briefly describe one difference between occurrence policies and claims-made policies regarding each of the following:

- Coverage trigger
- Loss development
- Investment income

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

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| QUESTION 4 | |
| TOTAL POINT VALUE: 2.5 | LEARNING OBJECTIVE(S): A3 |
| SAMPLE ANSWERS | |
| Part a: 0.75 point | |
| <p><u>Sample 1</u></p> <p>Since claim costs are increasing, the claims made policy is not as affected due to no report lag, where as there is report lag for occurrence policies.</p> <ul style="list-style-type: none"> - 2014 claims made loss costs= $100+100+100+100 = 400$ - 2014 occurrence loss costs = $100+103+106+109 = 418 > 400$ claims made policy <p><u>Sample 2</u></p> <p>The claims made policy will cost less than the occurrence policy because loss costs are increasing. The losses have more time to develop in the occurrence policy due to report lag & settlement lag, whereas the claims made policy only has settlement lag.</p> <p>For example, take 2015. Claims made cost = $103 \times 4 = 412$ Occurrence cost = $103+106+109+113=431$ Occurrence > claims made</p> <p><u>Sample 3</u></p> <p>A claims-made policy doesn't have report lag beyond the policy term, while an occurrence policy may have a report lag of many years. Since claim costs are increasing, there will be more time for trend to impact an occurrence policy.</p> | |
| Part b: 1.00 point | |
| <p><u>Sample 1</u></p> <p>An occurrence policy would be more underpriced because the annual loss cost trend compounds for future years of IBNYR. In this example the price for a 2014 claims-made policy vs that of an occurrence policy for modified trend is seen below: C-M: $100(4) = 100 \rightarrow$ Not Underpriced; Occ: $100 + 110 + 121 + 133.1 = 464.1 \rightarrow 46.1$ Underpriced</p> <p><u>Sample 2</u></p> <p>Claims-Made: $100 + 100 + 100 + 100 = 400$ Occurrence: $100 + 100(1.1) + 100(1.1^2) + 100(1.1^3) = 464.1$ but only charging 418 So, occurrence is more underpriced because the trend difference compounds.</p> <p><u>Sample 3</u></p> <p>Claims-made policy would be less underpriced because it's less reactive to any changes. Loss Cost for 2015 C-M: 440 vs 412 Loss Cost for 2015 Occ: $100*(1.1 + 1.1^2 + 1.1^3 + 1.1^4) = 510.51$ vs 431 C-M Difference: $412 - 440 = -28$ Occ Difference: $431 - 510 = -79$</p> | |

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Sample 4

RY 2015 LC: $110 + 110 + 110 + 110 = 440$

RY 2015 Original: $103 * 4 = 412 \rightarrow 6.8\%$ increase

AY 2015 LC: $110 + 121 + 133.1 + 146.41 = 510.51$

AY 2015 Original: $103 + 106 + 109 + 113 = 431 \rightarrow 18.4\%$ increase

Because Occurrence policies have reporting lag on top of the settlement lag, an occurrence policy would be more underpriced if the actual loss cost trend by report year is 10%.

Sample 5

A claims-made policy would be less underpriced because it is less impacted by the change in loss cost trend. The occurrence policy has both report lag and settlement lag, while the claims-made policy only has settlement lag, which reduces the time until the claims are closed, so less time for losses to be impacted by trends.

Part c: 0.75 point

Sample response for i. Coverage Trigger:

- Occurrence: when claim occurs/date of loss, Claims-made: when claim is reported/report date

Sample responses for ii. Loss Development:

- Occurrence has more loss development because there is pure IBNR and IBNER whereas claims-made has no pure IBNR because all claims are known at the end of the policy term
- Occurrence has report and settlement lag whereas claims-made only has settlement lag

Sample responses for iii. Investment Income:

- Occurrence policies have report lag and settlement lag so there is more time for investment to earn compared to CM policy where there is no report lag
- There is more time between premium collection and claims payment for occurrence policies due to report lag. As such, occurrence policies will earn more investment income
- There is more time for premium to be invested for occurrence policies since it takes longer for claims to be developed (due to pure IBNR) and paid out.

EXAMINER’S REPORT

Candidates were expected to understand the principles of Claims-Made policies. They were expected to know the loss development characteristics of Claims-Made and Occurrence policies, and the effect these differences have on ratemaking for both policy types.

Part a

Candidates were expected to demonstrate why claims-made policies would cost less than occurrence policies. Both written and numerical responses that illustrate the loss cost difference were accepted. In both cases, candidates were expected to recognize that occurrence policies would be more impacted by increasing loss costs (i.e. positive trend).

Common mistakes included:

- Not mentioning the impact of trend.
- Incorrectly calculating the loss costs.

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Part b

Candidates were expected to understand how a change in loss trends will affect the pricing for Claims-Made and Occurrence policies. Candidates were also expected to demonstrate why occurrence policies would be more underpriced as a result the change in trends. Both written and numerical responses that illustrate and compare the change in loss costs of claims-made and occurrence policies, due to the changing trend, were accepted.

Common mistakes included:

- Incorrectly applying the 10% trend to the table of claims by report year and lag. Candidates were not required to calculate the complete table, only what was necessary to calculate the new loss costs.
- Incorrectly calculating the loss cost using the 10% trend
- Failing to compare the change in loss costs between claims-made and occurrence policies
- Explaining why an occurrence policy is underpriced or why there is little underpricing for a claims-made policy, but not both. Both were not necessary if the candidate provided correct calculations of the new loss costs with 10% trend.

Part c

Candidates were expected to describe the difference between occurrence and claims-made policies with respect to coverage trigger, loss development and investment income.

The most common error was failure to identify the underlying cause for more/less development or more/less investment income/time.

Other common mistakes include:

- (i) Coverage trigger:
 - Stating report year/accident year
 - Stating that a loss needs to occur and be reported within the policy term to be covered in a claims-made policy
- (ii) Loss Development:
 - Simply stating that claims-made policies do not have IBNR without following up with additional details that clarify whether it is pure IBNR vs IBNER
 - Stating that claims-made policies have no development beyond policy term
 - Simply stating that claims-made policies are shorter-tailed than occurrence policies without explaining why they are shorter
 - Simply stating more/less development
- (iii) Investment income:
 - Stating that occurrence policies have more time or more reserves for investment without any additional support
 - Stating that claims-made have shorter time between claim occurrence and claim payment instead of between premium collection and claims payment/settlement