

Selected grading rubrics from 2008 Exam 6

Question 7.

Scenario 1:

a)

Put together log of incremental loss triangle: +.5 (if incomplete or incorrect can take off .25)
Calculate averages of each development period (13.85, 11.84, 7.70): +.75 (.25 for each); .25 points per average can still be awarded even if the candidate uses the natural log of the cumulative triangle (no credit should be awarded for doing the triangle correctly however)
Identify that α is the average of development year 0: +.25
Calculate that $Y1 =$ difference of development years 1 & 0 averages ($11.84 - 13.85 = -2.01$): +.5
Calculate that $Y2 =$ difference of development years 2 & 1 averages ($7.7 - 11.84 = -4.14$): +.5
.25 points can be awarded for each $Y1$ and $Y2$ if the candidate is estimating them by only differencing one Accident Year for a maximum of .5 points between the two

b)

As long as using values from a) in formula correctly: +.5

Scenario 2:

a)

Put together log of incremental loss triangle: +.5 (if incomplete or incorrect can take off .25)
Identify that α equals 13.85 (average calculation implied): +.5
 $Y1 = -2.01$ (average calculation implied): +.75
 $Y2 = -4.14$ (average calculation implied): +.75
.25 points can be awarded for each $Y1$ and $Y2$ if the candidate is estimating them by only differencing one Accident Year for a maximum of .5 points between the two

b)

As long as using values from a) in formula correctly: +.5

Scenario 3: (if they don't put together a triangle)

a)

Calculation of each variable independently

α : +1

$Y1$: +.75

$Y2$: +.75

.25 points can be awarded for each $Y1$ and $Y2$ if the candidate is estimating them by only differencing one Accident Year for a maximum of .5 points between the two

b)

As long as using values from a) in formula correctly: +.5

Additional information:

- Candidates receive no credit for part b if they use an α which happens to be one of the incremental natural logs (2003 to 2007). α must be the average of the incremental logs.
- For averages, partial credit can be awarded if the average calculation uses less than the proper number of values (4 instead of 5 for α for example) – max of .25 points awarded

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- Answers can vary significantly due to rounding and using exponents and logs – as long as the numbers used seem consistent full credit is awarded.
- If the candidate gets the answer correct for each variable without any work we will give credit
- If the candidate gets the answer wrong, but it is an interim step that is not obvious from the work trail, the candidate does not receive any credit for that portion of the response
- For part B; the exponentiation of Y2 is not acceptable even if it gives the right answer for the median if the candidate confuses the Y2 answer for the average of the natural log of incremental payments of development year 2
- Partial credit for the triangle is only if the triangle is incremental, but missing development year 0 or if there is a calculation error in the natural log of incremental payments – no credit for cumulative triangle, but if alpha is calculated correctly the candidate can still receive 1 point max for alpha
- For part B, even if the parameters are ridiculous and make no sense, the candidate can receive a maximum of .5 points if the parameters are used appropriately

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Question 15.

- a) Total: 2.5 points
 - a. .5 pts for summing the payment year contribution
 - b. .5 pts for calculating the calendar year weights
(1.0 pts for correct weights)

 - c. .5 pts for the average or median bias

 - d. .5 pts for multiplying bias * weights
 - e. .5 pts for summing the bias * weights
(1.0 pts for wtd average calculation)

For each step, if they clearly explain in words what to do but do not perform the actual calculations, half credit.

If the candidate does not get a, b, or c right, we are not giving points for d, e. They do not get credit just for knowing how to calculate a weighted average. If a,b or c is right, they have shown that they have some idea what is going on.

- b) Total: .5 points
 - a. .25 points for each advantage of weighted average

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Question 19.

Part A

.5 for adequately describing each method.

Deferral Matching (1 to 2 of the below):

- Timing of income and expense recognition so both occur at the same time.
- Earning premium and recognizing deferred acquisition cost
- Focus on income statement
- Valuing the entity as an on-going concern (investors)

Asset/Liability (1 to 2 of the below)

- Focus on value of asset and liabilities that exist as of the balance sheet date.
- Does not recognize deferred acquisition cost.
- Focuses on balance sheet.
- Valuing the entity from a liquidation perspective (regulators).

Part B – graded in conjunction with part A.

.5 awarded if given one detail about each of the above not contained in candidate's answer to A.

Credit was given for part B if candidate answered Part A adequately (3 to 4 of the bullet points above).

Part C

Deferral/Matching so that premiums and liabilities are recognized over the length of the contract.

Or

Asset/Liability if perspective of users was to view firm's ability to pay claims (solvency)

Or

Deferral/Matching if the focus is to view the emerging profits of the organization.

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Question 37.

a.

0.50 pts – For each viable explanation on why the company’s rate history might not provide the best onlevel exp. estimate. Answers may include but are not limited to the following. (Two answers for a total of 1.00 pt.)

- The reinsurer’s own rate change information is incomplete in that it is based only on a subset of renewal policies in each year and does not consider the rate level of “new business” policies written, which may vary materially from the rate level of renewal policies;
 - a. Acceptable: Company may lack enough data to be credible, therefore rely on industry data.
 - b. Not Acceptable: Industry data more credible (that’s given – nature of industry data)
- The rate change indications based on the reinsurer’s own data are erratic and raise the issue as to just how reliable these statistics are, especially when the equivalent industry rate changes appear to be steady rate decreases of 10% per year.
 - a. Not Acceptable: Implying it would be “difficult” to calculate on-level premium based on erratic rate history.
 - b. 0.25 pts – If candidate eluded to industry being “stable” or reinsurer being volatile without tying in the erratic nature of the reinsurer’s rate history with the stable trend in industry loss ratio which indicates a steady decrease in pricing.
- No credit if referencing using Industry Loss & LAE ratios to peg a loss or loss ratio estimate. Must reference using data to obtain a rate history to adjust exposure/premium to on-level. The ELR is estimated using reinsurer’s aggregate loss experience and on-level pure premium.

b.

0.50 pts – For each viable explanation on why the rate history derived from industry Schedule P data might not provide the best on-level exposure estimate. Answers may include but are not limited to the following. (Two answers for a total of 1.00 pt.)

- The actuary must make some critical assumptions about the Schedule P line data, any one of which may be invalid, in order to rely on those implied rate changes.
 - A constant mix of loss exposures are represented;
 - Similar coverages are provided in each year; or
 - No significant difference in loss reserve adequacy between accident years.
 - Deduct 0.25 pts – Candidate notes that industry data consolidates experience from different companies but notes an invalid concern regarding the consolidation, for ex. “varying report lags”
- Rate changes derived from underlying industry data may not mirror what has occurred with the reinsurer’s own business.
 - Acceptable: Company may have enough credible data to warrant using its rate history.

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- Not Acceptable: To note that reinsurer's rate history is available to calculate on-level premium (that's given).
 - Deduct 0.25 pts – Candidate references industry loss ratio trend may not be indicative of reinsurer experience but doesn't relate this to rate history.

Question 41.

The CAS paper defines ERM as follows

ERM is the discipline by which an organization in any industry assesses, controls, exploits, finances, and monitors risks from all sources for the purpose of increasing the organization's short- and long-term value to its stakeholders.

The paper goes on to give individual attention to several pieces of this definition.

- I. Discipline***
 - A. Orderly or prescribed conduct or pattern of behavior***
 - B. Full support of management***
 - C. Influences corporate decisions***
 - D. Becomes part of the culture of the enterprise***
- II. Applies to all industries***
- III. ERM is value adding and risk mitigating part of the risk managing process***
- IV. All sources of risk are considered(not only financial)***
- V. ERM considers all stakeholders***
 - A. Shareholders***
 - B. Debt holders***
 - C. Management, officers and employees***
 - D. Customers***
 - E. Community***
- VI. ERM is a strategic decision support framework for management. Improves decision-making at all levels of the organization..***

- (a) Identify two ways in which the investment bank's approach is consistent with this definition.

Mentioning any of two of the following will earn full credit. Mentioning only one earns a half point.

- Meetings are regularly scheduled (prescribed conduct, I.A.)
- Has support of management (I.B.)
- Meetings influence corporate decisions (I.C.)
- Meetings are considered value adding (III)
- Meetings concerned on assessing, exploiting, and monitoring risk (general)
- Becomes part of the enterprise's culture, but not on all levels (I'd give 0.25p for this)

Additionally:

- value to shareholders is mentioned – 0.25p only
- exploiting financial risk is mentioned – 0.25p only
- applies also to institutions other than insurance companies – 0p
- part of culture is mentioned – 0.25p

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- (b) Identify two ways in which the investment bank's approach deviates from the definition.
Mentioning any of two of the following will earn full credit. Mentioning only one earns a half point.

- Not all sources of risk are considered (IV) (only financial or only external are)
- Not all stakeholders are considered (V)
- May not be considering long-term results (general)
- Not considering controlling or financing or reducing of risks (general)
- Limited to senior management rather than part of enterprise (all levels) culture (general).
- No review process mentioned.
- No actions other than reporting to management by the team.

Notes on point assignment:

- Simply saying that an aspect is inconsistent with the definition is not enough. Must also mention complementary feature. For example, simply saying "focus on share price not consistent with definition" earns no credit but saying "focus on share price only and ignoring other stakeholders such as employees or community" will earn credit.