

27. (4.25 points)

a. (1 point)

Identify and briefly describe two tests used to assess the transfer of risk in a reinsurance contract.

b. (0.5 point)

Describe a situation in which one test might be recommended over the other.

c. (1.5 points)

Identify three data elements needed to perform the recommended test in part b. above and the purpose of each element.

d. (1 point)

Explain two practical considerations to keep in mind when conducting a risk transfer analysis.

e. (0.25 point)

Briefly describe why a contract that fails risk transfer tests might qualify for reinsurance accounting.

SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 27	
TOTAL POINT VALUE: 4.25	LEARNING OBJECTIVE: E
SAMPLE/ACCEPTED ANSWERS	
Part a: 1 point	
<ul style="list-style-type: none"> • 10-10 rule = reinsurer must have 10% or greater chance of realizing a 10% or greater loss • ERD: The probability of a NPV loss times the average severity of loss given that there is a loss must be >1%. • Tail value at risk—looks at the average loss exceeding a certain percentile. • CTE—Conditional tail expectation—the expected loss conditioned on an extreme event (i.e. a loss beyond a certain percentile) 	
Part b: 0.5 point	
<ul style="list-style-type: none"> • A situation where is a 5% chance of loss but 25% likely loss would not pass 10-10 but would pass ERD. • If there is a large tail in distribution of loss. This would suggest ERD as it would take it into account. • If extremely large values in tail, TVaR may be more appropriate. • ERD would be recommended if state wants to have more stringent rules for risk transfer testing (can ↑ERD to 2-3%) • High probability of loss with low severity may indicate risk transfer on 1% ERD but not via the 10-10 rule. 	
Part c: 1.5 points	
<ul style="list-style-type: none"> • The discount rate is needed. This is needed to actually discount the losses. The risk-free rate is recommended. • Premium. This is used to determine if there is a loss to the reinsurer or not. • Payment pattern: would need this to consider the time value of money • Contractual features which limit loss such as loss retro caps, which would need to factor these in as they may limit loss • Simulated losses → estimates frequency and size of loss to reinsurer • Aggregate loss distribution to determine the probability of achieving a loss • Losses—this would be the responsibility of the reinsurer and would also help determine if there is risk transfer 	
Part d: 1 point	
<ul style="list-style-type: none"> • Profit commissions should NOT be included as we are only concerned with scenarios resulting in a loss. Profit commissions obviously do not exist when there is a loss. • Reinsurance expense: should be excluded because it is not cash flow between insurer and reinsurer • Commutation clauses—automatic, specifically. Any element which limits the reinsurers risk should be evaluated. • Loss distribution—must choose distribution that matches how losses act • Selecting loss distribution to use. Must be careful as losses depend on this, particularly in the tail. • Interest rate used: too low, will overdetect risk transfer • Model parameters. Either implicitly or explicitly accounted for, the first is usually the case. • Are assumptions taken from reinsurer pricing? These tend to be more conservative and 	

SAMPLE ANSWERS AND EXAMINER'S REPORT

thus overestimate risk transfer in some cases.

- Interest (discount) rate—risk free rate often used, but insurer investment return might be higher than risk free rate. However that would mean risk transfer would be more likely for firms with lower investments.
- Parameter risk – need to keep in mind risk associated with selecting wrong parameters initially
- Discounting should be the same in all aspects and use, at minimum, the risk free rate.
- Allowing cash flow times to vary is more accurate, but it complicates the process.
- Treat all payments from cedant to reinsurer as premium; avoids labeling of some payments as fees, ability to game contract to pass risk transfer if it otherwise wouldn't
- Payment pattern—might be different for particular company than industry average
- Premium used: actual GWP is best. Estimated premium will overdetect risk transfer. Initial premium is not always accurate.
- If premium is adjustable based on loss outcomes, then premium must also be modeled to reflect this. This will tend to reduce the severity of loss scenarios and make it more difficult to determine risk transfer

Part e: 0.25 point

- If it fulfills the substantially all exception
- If contract transfers all risk (aka 100% QS) from insurer to reins on a profitable book of biz

EXAMINER'S REPORT

Candidates performed moderately well, though many seemed to struggle with parts of the question. Very few candidates received full credit.

For this question, candidates were expected to fully understand the tests for risk transfer. This includes how to calculate the tests, which test would be preferred in certain situations, practical considerations, and exceptions. Most candidates were able to at least identify two tests and correctly explain at least one of the tests. Several candidates struggled with part b—explaining a scenario in which one test would be preferable, and many struggled with part c—describing three distinct data elements needed to perform the test. Refer to the sections below for common errors in these parts.

Part a

Candidates generally performed fairly well on this part. To obtain full credit, candidates were expected to both identify and correctly explain both tests listed. For the ERD, candidates were expected to describe the basic calculation. For the 10-10 rule, candidates were expected to know that it requires a 10% chance of a 10% loss. For all other tests, candidates were expected to explain how those methods test for risk transfer.

Common errors included:

- Listing “timing risk” and “underwriting risk” as the two tests. These are two types of risk, not tests for risk transfer analysis.
- Listing Expected Policyholder Deficit (or EPD), rather than Expected Reinsurer Deficit (or ERD).
- For ERD, listing the 1% threshold, but not explaining how the test is calculated.
- For those that listed VaR, TVar, or CTE as one of the two tests, the explanation was often missing, incorrect, or insufficient

SAMPLE ANSWERS AND EXAMINER'S REPORT

- Listing “Monte Carlo Simulations” as a test—not a test in and of itself, but part of other tests.
- Listing “Cash Flow Analysis” as a test, without mentioning any other details or thresholds—not a test in and of itself, but part of other tests.

Part b

Candidates were expected to give a scenario in which one test was preferred. To get full credit, a candidate had to correctly explain the scenario and identify which test was preferred. Many candidates correctly answered this question, but there were a significant number of responses that included the errors listed below.

Common errors included:

- Answers where candidates neglected to give a scenario, but rather just stated “ERD is better” or “10-10 is better”
- Describing ERD as better because it can incorporate loss simulations—these can also be incorporated into the 10/10 rule
- Describing ERD as better because it uses net present values—10/10 rule can also be evaluated on present values

Part c

To receive full credit, candidates needed to identify and describe the purpose of three distinct data elements. Candidates struggled most with this part of the question.

Common errors included:

- Failure to describe the purpose of the data element. Many responses explained the data element or listed considerations related to the data element, but failed to describe the purpose.
- Restating the same data element. For example, “loss distribution” and “expected losses” were considered one data element, as expected losses are derived from the loss distribution. Additionally, “frequency of losses of a given size” and “severity distribution of losses” were counted as one data element, as these both describe the loss distribution.
- Listing treaty terms, commutation clauses, etc. These are not data elements. (Limits, however, was accepted as a data element)
- Listing reinsurer expenses. These are not considered in risk transfer.
- Listing policyholder surplus as the basis needed for determining if a loss exists.

Part d

To obtain full credit, candidates needed to identify and explain two separate practical considerations. Most candidates did fairly well on this part.

Common incorrect answers included:

- Answers that lacked explanation for the considerations
- Listing timing and underwriting risk as the two considerations; underwriting risk is what the test is testing for. Timing risk was accepted if it referred to commutations or other treaty terms limiting the timing risk

Part e

Candidates were expected to be able to identify the “substantially all” requirement. Listing this rule was all that was required for full credit.

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Common incorrect answers included:

Manager discretion determines whether a treaty is risk transfer

Exceptions made by the insurance commissioner can deem a treaty count as risk transfer.