Reliability and Validity of Audit Sampling

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pwc

Executive Summary

- What is Audit Sampling?

- Challenges in applying Audit Sampling

- Quality considerations in audit sampling

- Moving forward

What is Audit Sampling?

- How do auditors obtain sufficient appropriate audit evidence to arrive at a conclusion?

  1. Test the entire population e.g. an account balance in the Income Statement.

  2. Test a portion of the entire population.

  Method 2 sounds easier!

What is Audit Sampling?

- Defining Audit Sampling

- ISA 530 "Audit Sampling"

- "The application of audit procedures to less than 100% of items within a population of audit relevance such that all sampling units have a chance of selection in order to provide the auditor with a reasonable basis on which to draw conclusions about the entire population."

                                    [ISA 530.5(a)]

What is Audit Sampling?

- Key characteristics:

  - Every item in the population has a chance to be selected; and

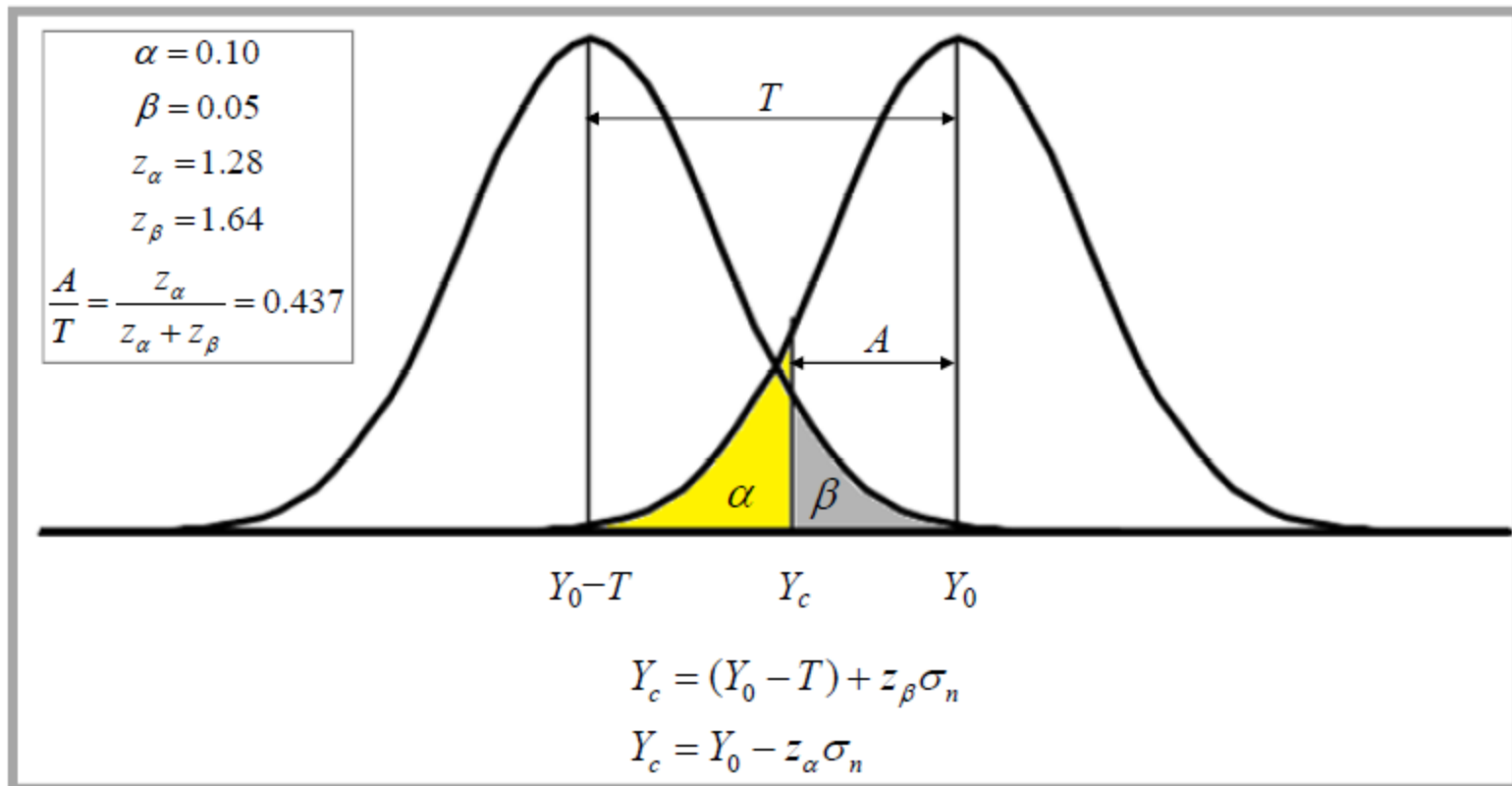 - The sample must be representative of the population.

What is Audit Sampling?

- How is this applied?
  - Statistical and non statistical audit sampling.
  - Both have pros and cons.
  - Underlying principles similar.

What is Audit Sampling?

- Applying statistical sampling can be complicated

$$\alpha = 0.10$$
$$\beta = 0.05$$
$$z_\alpha = 1.28$$
$$z_\beta = 1.64$$
$$\frac{A}{T} = \frac{z_\alpha}{z_\alpha + z_\beta} = 0.437$$

$$Y_c = (Y_0 - T) + z_\beta \sigma_n$$
$$Y_c = Y_0 - z_\alpha \sigma_n$$

What is Audit Sampling?

- In practice we may prefer non statistical audit sampling.

- It sounds easy, but what's the catch?

Challenges in applying Audit Sampling

- Sampling risk - we may draw an inappropriate conclusion:

    1. Incorrectly reject the test because the samples indicate material error, when there is no material error.

        -> more investigation -> inefficient audit

    2. Incorrectly accept the test because samples did not indicate material error, whereas a material error exists.

        -> possibly incorrect overall audit conclusion

What is Audit Sampling?

- Typical FAQ of audit teams:
  - When can we use sampling?
  - How many samples should we test?
  - How does materiality impact the sample size?
  - How should we select our samples?
  - What happens if we find exceptions?
  - How do we know we haven't made an incorrect audit conclusion?

Challenges in applying Audit Sampling

How do we address these risks and challenges?

Designing an effective and efficient audit test is as important as the decision on how many samples to test!

Important to understand the limitations of audit sampling.

Challenges in applying Audit Sampling

- Limitations of audit sampling
1. Not designed for high error rates.
2. Don't use if expected errors close to tolerable misstatement.
3. Non statistical audit sampling normally tests for overstatement, not understatement e.g. creditors.
4. Doesn't work well on non-homogenous populations.
5. Sometimes the sample size is still very large!
   - Consider using technology to analyze big data.

Quality considerations in Audit Sampling

Designing an appropriate audit test:

1. Understand the characteristics of the population.

    - e.g. is the population homogenous?
        - can we test non-homogenous items separately?

2. Determine the audit objective(s).

    - e.g. appropriateness of expenditure in PPE
        - Perhaps testing samples on controls around the approvals process would be suitable?
        - What if we are testing for override of controls?
        - Then maybe tests of details (ToD) would be better.

Quality considerations in Audit Sampling

Designing an appropriate audit test (cont'd):

3. Assess the amount of audit risk.

    - the higher the risk, the larger the sample size.

    - e.g. let's say we are more concerned about the very material items in PPE say > RM100m

        - now perhaps it would be better to perform a 100% test on items > RM100m

        Sampling may not be the most appropriate method!

Quality considerations in Audit Sampling

Designing an appropriate audit test (cont'd):

4. How much comfort do we require from sampling?

   - generally the more comfort, the larger the sample size.

   - consider combining with other non-sampling tests.

   - e.g. perhaps we should test all items > RM100m and then perform non statistical audit sampling on the rest of PPE.

   Combining non-sampling and sampling techniques may be better!

Quality considerations in Audit Sampling

Designing an appropriate audit test (cont'd):

5. Consider stratifying the population:

    - increases precision of our test.

    - can project misstatements within each sub-population (if applicable) or conclude on each sub-population separately.

6. Estimate the error rate if sampling:

    - the higher the error rate, the larger the sample size.

    - if expected error too high, perhaps we should reduce it by "cleaning" the data first.

Quality considerations in Audit Sampling

Designing a sampling test:

7. From -> 1. to 6., determine sample size using sampling tables or sampling formula.

8. Choose method for selecting samples.

    - random/systematic/haphazard based on characteristics of the population/sub-population.

9. Confirm that the design is sufficiently robust.

    - the test as designed gives us a chance to detect material misstatements.

Quality considerations in Audit Sampling

- Impact on sample size; generally need more samples if:

  - If the risk is higher;

  - More audit comfort is needed;

  - We expect more errors;

  - Materiality (for ToD) is low;

  - No other non-sampling tests are performed on the same audit objectives (ToD).

Quality considerations in Audit Sampling

- Addressing exceptions from sampling tests; consider:
  - Is there a pattern in the exceptions?
  - What is the root cause of the exceptions?
  - Are the exceptions isolated? Do we need to re-test?
  - Does it mean that the controls are totally or only partly ineffective?
  - Is the error rate higher than expected?
  - Must project the misstatement.
  - Projected and actual misstatement vs tolerable misstatement.

Quality considerations in Audit Sampling

- Addressing exceptions from sampling tests: (cont'd)

  - Auditee may need to "clean up" population before a retest.

  - If the error rate is too high, should there be more analysis?

  - Reconsider design and revise sample sizes when retesting.

Moving forward

- Develop an common approach for audit testing.

- Agree on a consistent approach on sample sizes.

  - Implement standardised sampling tables or sampling formula.

  - Consultation with experts?

- Training on design of tests and addressing exceptions.

What questions do you have?