

SA 530 (AAS 15)

AUDIT SAMPLING

*(Effective for all audits relating to
accounting periods beginning on or after April 1, 1998)*

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Standard on Auditing (SA) 530^{*}, "Audit Sampling", should be read in the context of the "Preface to the Standards on Quality Control, Auditing, Review, Other Assurance and Related Services"¹, which sets out the authority of SAs.

^{*} Issued in April, 1998.

¹ Published in the July 2007 issue of the Journal.

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Introduction

1. The purpose of this Standard on Auditing (SA) is to establish standards on the design and selection of an audit sample and the evaluation of the sample results. This SA applies equally to both statistical and non-statistical sampling methods. Either method, when properly applied, can provide sufficient appropriate audit evidence.
2. When using either statistical or non-statistical sampling methods, the auditor should design and select an audit sample, perform audit procedures thereon, and evaluate sample results so as to provide sufficient appropriate audit evidence.
3. "Audit sampling" means the application of audit procedures to less than 100% of the items within an account balance or class of transactions to enable the auditor to obtain and evaluate audit evidence about some characteristic of the items selected in order to form or assist in forming a conclusion concerning the population.
4. It is important to recognise that certain testing procedures do not come within the definition of sampling. Tests performed on 100% of the items within a population do not involve sampling. Likewise, applying audit procedures to all items within a population which have a particular characteristic (for example, all items over a certain amount) does not qualify as audit sampling with respect to the portion of the population examined, nor with regard to the population as a whole, since the items were not selected from the total population on a basis that was expected to be representative. Such items might imply some characteristic of the remaining portion of the population but would not necessarily be the basis for a valid conclusion about the remaining portion of the population.

Design of the Sample

5. When designing an audit sample, the auditor should consider the specific audit objectives, the population from which the auditor wishes to sample, and the sample size.

Audit Objectives

6. The auditor would first consider the specific audit objectives to be achieved and the audit procedures which are likely to best achieve those

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objectives. In addition, when audit sampling is appropriate, consideration of the nature of the audit evidence sought and possible error conditions or other characteristics relating to that audit evidence will assist the auditor in defining what constitutes an error and what population to use for sampling. For example, when performing tests of control over an entity's purchasing procedures, the auditor will be concerned with matters such as whether an invoice was clerically checked and properly approved. On the other hand, when performing substantive procedures on invoices processed during the period, the auditor will be concerned with matters such as the proper reflection of the monetary amounts of such invoices in the financial statements.

Population

7. The population is the entire set of data from which the auditor wishes to sample in order to reach a conclusion. The auditor will need to determine that the population from which the sample is drawn is appropriate for the specific audit objective. For example, if the auditor's objective were to test for overstatement of accounts receivable, the population could be defined as the accounts receivable listing. On the other hand, when testing for understatement of accounts payable, the population would not be the accounts payable listing, but rather subsequent disbursements, unpaid invoices, suppliers' statements, unmatched receiving reports, or other populations that would provide audit evidence of understatement of accounts payable.

8. The individual items that make up the population are known as sampling units. The population can be divided into sampling units in a variety of ways. For example, if the auditor's objective were to test the validity of accounts receivables, the sampling unit could be defined as customer balances or individual customer invoices. The auditor defines the sampling unit in order to obtain an efficient and effective sample to achieve the particular audit objectives.

Stratification

9. To assist in the efficient and effective design of the sample, stratification may be appropriate. Stratification is the process of dividing a population into sub-populations, each of which is a group of sampling units, which have similar characteristics (often monetary value). The strata need to be explicitly

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defined so that each sampling unit can belong to only one stratum. This process reduces the variability of the items within each stratum. Stratification therefore, enables the auditor to direct audit efforts towards the items which, for example, contain the greatest potential monetary error. For example, the auditor may direct attention to larger value items for accounts receivable to detect overstated material misstatements. In addition, stratification may result in a smaller sample size.

Sample Size

10. When determining the sample size, the auditor should consider sampling risk, the tolerable error, and the expected error. Examples of some factors affecting sample size are contained in Appendix 1 and Appendix 2.

Sampling Risk

11. Sampling risk² arises from the possibility that the auditor's conclusion, based on a sample, may be different from the conclusion that would be reached if the entire population were subjected to the same audit procedure.

12. The auditor is faced with sampling risk in both tests of control and substantive procedures as follows:

(a) Tests of Control:

- (i) Risk of Under Reliance: The risk that, although the sample result does not support the auditor's assessment of control risk, the actual compliance rate would support such an assessment.
- (ii) Risk of Over Reliance: The risk that, although the sample result supports the auditor's assessment of control risk, the actual compliance rate would not support such an assessment.

(b) Substantive Procedures:

- (i) Risk of Incorrect Rejection: The risk that, although the sample

² Sampling risk can be contrasted with non-sampling risk which arises when the auditor uses any audit procedures. Non-sampling risk arises because, for example, most audit evidence is persuasive rather than conclusive, the auditor might use inappropriate procedures or might misinterpret evidence and, thus, fail to recognise an error. The auditor attempts to reduce non-sampling risk to a negligible degree by appropriate planning, direction, supervision and review.

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result supports the conclusion that a recorded account balance or class of transactions is materially misstated, in fact it is not materially misstated.

- (ii) Risk of Incorrect Acceptance: The risk that, although the sample result supports the conclusion that a recorded account balance or class of transactions is not materially misstated, in fact it is materially misstated.

13. The risk of under reliance and the risk of incorrect rejection affect audit efficiency as they would ordinarily lead to additional work being performed by the auditor, or the entity, which would establish that the initial conclusions were incorrect. The risk of over reliance and the risk of incorrect acceptance affect audit effectiveness and are more likely to lead to an erroneous opinion on the financial statements than either the risk of under reliance or the risk of incorrect rejection.

14. Sample size is affected by the level of sampling risk the auditor is willing to accept from the results of the sample. The lower the risk the auditor is willing to accept, the greater the sample size will need to be.

Tolerable Error

15. Tolerable error is the maximum error in the population that the auditor would be willing to accept and still conclude that the result from the sample has achieved the audit objective. Tolerable error is considered during the planning stage and, for substantive procedures, is related to the auditor's judgement about materiality. The smaller the tolerable error, the greater the sample size will need to be.

16. In tests of control, the tolerable error is the maximum rate of deviation from a prescribed control procedure that the auditor would be willing to accept, based on the preliminary assessment of control risk. In substantive procedures, the tolerable error is the maximum monetary error in an account balance or class of transactions that the auditor would be willing to accept so that when the results of all audit procedures are considered, the auditor is able to conclude, with reasonable assurance, that the financial statements are not materially misstated.

Expected Error

17. If the auditor expects error to be present in the population, a larger

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sample than when no error is expected ordinarily needs to be examined to conclude that the actual error in the population is not greater than the planned tolerable error. Smaller sample sizes are justified when the population is expected to be error free. In determining the expected error in a population, the auditor would consider such matters as error levels identified in previous audits, changes in the entity's procedures, and evidence available from other procedures.

Selection of the Sample

18. The auditor should select sample items in such a way that the sample can be expected to be representative of the population. This requires that all items in the population have an opportunity of being selected.

19. While there are a number of selection methods, three methods commonly used are:

- ◆ Random selection, which ensures that all items in the population have an equal chance of selection, for example, by use of random number tables.
- ◆ Systematic selection, which involves selecting items using a constant interval between selections, the first interval having a random start. The interval might be based on a certain number of items (for example, every 20th voucher number) or on monetary totals (for example, every Rs 1,000 increase in the cumulative value of the population). When using systematic selection, the auditor would need to determine that the population is not structured in such a manner that the sampling interval corresponds with a particular pattern in the population. For example, if in a population of branch sales, a particular branch's sales occur only as every 100th item and the sampling interval selected is 50, the result would be that the auditor would have selected all, or none, of the sales of that particular branch.
- ◆ Haphazard selection, which may be an acceptable alternative to random selection, provided the auditor attempts to draw a representative sample from the entire population with no intention to either include or exclude specific units. When the auditor uses this method, care needs to be taken to guard against making a selection that is biased, for example, towards items which are easily located, as they may not be representative.

Evaluation of Sample Results

20. Having carried out, on each sample item, those audit procedures that are appropriate to the particular audit objective, the auditor should:

- (a) analyse any errors detected in the sample;
- (b) project the errors found in the sample to the population; and
- (c) reassess the sampling risk.

Analysis of Errors in the Sample

21. In analysing the errors detected in the sample, the auditor will first need to determine that an item in question is in fact an error. In designing the sample, the auditor will have defined those conditions that constitute an error by reference to the audit objectives. For example, in a substantive procedure relating to the recording of accounts receivable, a mis-posting between customer accounts does not affect the total accounts receivable. Therefore, it may be inappropriate to consider this an error in evaluating the sample results of this particular procedure, even though it may have an effect on other areas of the audit such as the assessment of doubtful accounts.

22. When the expected audit evidence regarding a specific sample item cannot be obtained, the auditor may be able to obtain sufficient appropriate audit evidence through performing alternative procedures. For example, if a positive account receivable confirmation has been requested and no reply was received, the auditor may be able to obtain sufficient appropriate audit evidence that the receivable is valid by reviewing subsequent payments from the customer. If the auditor does not, or is unable to, perform satisfactory alternative procedures, or if the procedures performed do not enable the auditor to obtain sufficient appropriate audit evidence, the item would be treated as an error.

23. The auditor would also consider the qualitative aspects of the errors. These include the nature and cause of the error and the possible effect of the error on other phases of the audit.

24. In analysing the errors discovered, the auditor may observe that many have a common feature, for example, type of transaction, location, product line, or period of time. In such circumstances, the auditor may decide to identify all items in the population which possess the common feature, thereby producing a sub-population, and extend audit procedures in this

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area. The auditor would then perform a separate analysis based on the items examined for each sub-population.

Projection of Errors

25. The auditor projects the error results of the sample to the population from which the sample was selected. There are several acceptable methods of projecting error results. However, in all the cases, the method of projection will need to be consistent with the method used to select the sampling unit. When projecting error results, the auditor needs to keep in mind the qualitative aspects of the errors found. When the population has been divided into sub-population, the projection of errors is done separately for each sub-population and the results are combined.

Reassessing Sampling Risk

26. The auditor needs to consider whether errors in the population might exceed the tolerable error. To accomplish this, the auditor compares the projected population error to the tolerable error taking into account the results of other audit procedures relevant to the specific control or financial statement assertion. The projected population error used for this comparison in the case of substantive procedures is net of adjustments made by the entity. When the projected error exceeds tolerable error, the auditor reassesses the sampling risk and if that risk is unacceptable, would consider extending the audit procedure or performing alternative audit procedures.

Effective Date

27. This Standard on Auditing becomes operative for all audits relating to accounting periods beginning on or after April 1, 1998.

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Appendix 1

Examples of Factors Influencing Sample Size for Tests of Control

Factor	Conditions leading to	
	Smaller Sample Size	Larger Sample Size
Assessment of control risk	Higher preliminary assessment of control risk	Lower preliminary assessment of control risk
Tolerable error	Higher acceptable rate of deviation	Lower acceptable rate of deviation
Allowable risk of over reliance	Higher risk of over reliance	Lower risk of over reliance
Expected error	Lower expected rate of deviation in population	Higher expected rate of deviation in population*
Number of items in population	Virtually no effect on sample size unless population is small	

*High expected deviation rates ordinarily warrant little, if any, reduction of control risk and, therefore, tests of controls might be omitted.

**Examples of Factors Influencing Sample Size
for Substantive Procedures**

Factor	Conditions Leading to	
	Smaller Sample Size	Larger Sample Size
Assessment of control risk	Lower control risk	Higher Control risk
Reduction in detection risk because of other substantive tests related to the same financial statement assertions	Greater use of other substantive tests	Reduced use of other substantive tests
Tolerable error	Large measure of tolerable error	Smaller measure of tolerable error
Expected error	Smaller errors or lower frequency	Larger errors or higher frequency
Population value	Smaller monetary significance to the financial statements	Larger monetary significance to the financial statements
Number of items in population	Virtually no effect on sample size unless population is small	
Acceptable level of detection risk	Higher acceptable level of detection risk	Lower acceptable level of detection risk
Stratification	Stratification of the population, if appropriate	No stratification of the population