STATEMENT OF AUDITING STANDARDS
430
AUDIT SAMPLING

(Effective for audits of financial statements for periods beginning before 15 December 2004)[*]

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[*] HKSA 530 "Audit Sampling and Other Means of Testing" is effective for audits of financial statements for periods beginning on or after 15 December 2004.

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430
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*Statements of Auditing Standards (SASs) are to be read in the light of SAS 010 "The scope and authority of auditing pronouncements". In particular, they contain basic principles and essential procedures (auditing standards), indicated by paragraphs in **bold italic type**, with which auditors are expected to comply in the conduct of any audit including those of companies applying section 141D of the Companies Ordinance. SASs also include explanatory and other material which is designed to assist auditors in interpreting and applying auditing standards.*

Introduction

1.   The purpose of this Statement of Auditing Standards (SAS) is to establish standards and provide guidance on the design and selection of an audit sample and the evaluation of the sample results. This SAS applies equally to both statistical and non-statistical sampling methods. Either method, when properly applied, can provide appropriate audit evidence.

2.   ***When using either statistical or non-statistical sampling methods, auditors should design and select an audit sample, perform audit procedures thereon and evaluate sample results so as to provide sufficient appropriate audit evidence. (SAS 430.1)***

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 auditors 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. Audit sampling can be used as part of a test of control or as part of a substantive procedure.

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.

5.   Statistically based sampling involves the use of techniques from which mathematically constructed conclusions about the population can be drawn. If non-statistical methods are adopted, auditors draw a judgemental opinion about the population.

Design of the sample

6.   ***When designing an audit sample, auditors should consider the specific audit objectives, the nature of the population from which they wish to sample and the factors affecting the sample size. (SAS 430.2)***

Audit objectives

7.   Auditors first consider the specific audit objectives to be achieved and the audit procedures which are likely to best achieve those 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 assists auditors 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, auditors are 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, auditors are concerned with matters such as the proper reflection of the monetary amounts of such invoices in the financial statements.

Population

8. The population is the entire set of data from which auditors wish to sample in order to reach a conclusion. Auditors would determine that the population from which the sample is drawn is appropriate for the specific audit objective and complete. For example, if the auditors' objective were to test for overstatement of debtors, the population could be defined as the debtors listing. On the other hand, when testing for understatement of creditors, the population would not be the creditors listing but rather subsequent disbursements, unpaid invoices, suppliers' statements, unmatched receiving reports or other populations that would provide audit evidence of understatement of creditors.

9. 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 auditors' objective were to test the validity of debtors, the sampling unit could be defined as customer balances or individual customer invoices. Auditors define the sampling unit in order to obtain an efficient and effective sample to achieve the particular audit objectives.

Stratification

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

Sample size

11. ***When determining sample sizes, auditors should consider sampling risk, the tolerable error and the expected error. (SAS 430.3)***

12. Examples of some factors affecting sample size are contained in the Appendix.

Sampling risk

13. Sampling risk* arises from the possibility that the auditors' 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. Sampling risk for substantive procedures is one form of detection risk, which is the risk that the auditors' procedures do not detect a misstatement that exists in an account balance or class of transactions.

14. Auditors are faced with sampling risk in both tests of control and substantive procedures as set out below.

    a. Tests of control

        i. Risk of under reliance: the risk that, although the sample result does not support the auditors' assessment of control risk, the actual compliance rate would support such an assessment.

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*Sampling risk can be contrasted with non-sampling risk. Non-sampling risk is the risk of erroneous conclusions being drawn from audit procedures due to any reason other than those which give rise to sampling risk. It arises when auditors use any audit procedures, ie. both those which involve sampling and those which do not. Factors which contribute to non-sampling risk include the fact that most audit evidence is persuasive rather than conclusive, auditors might use inappropriate procedures or might misinterpret evidence and thus fail to recognise an error. Auditors attempt to reduce non-sampling risk to a negligible degree by appropriate planning, direction, supervision and review.

        ii.   Risk of over reliance: the risk that, although the sample result supports the auditors' 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 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.

15.   The risk of under reliance and the risk of incorrect rejection may affect audit efficiency as they may lead to additional work being performed by the auditors, or the entity.

16.   The risk of over reliance and the risk of incorrect acceptance may 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.

17.   Sample size is affected by the level of sampling risk auditors are willing to accept from the results of the sample. The level of acceptable sampling risk depends upon the importance of the results of the audit procedure involving sampling to the auditors' conclusions. The greater the reliance on the results, the lower the sampling risk auditors are willing to accept and the greater the sample size needs to be.

18.   The extent of reliance on the results of the procedure is related to the extent to which other substantive procedures provide audit evidence regarding the same financial statement assertion. The more other substantive procedures lower the detection risk for a particular assertion, and therefore the lower the reliance on the results of the substantive procedure using audit sampling, the higher the acceptable sampling risk relating to the sampling procedure and consequently, the smaller the sample size.

Tolerable error

19.   Tolerable error is the maximum error in the population that auditors 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 auditors' judgement about materiality. The smaller the tolerable error, the greater the sample size needs to be.

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

Expected error

21.   If auditors expect errors to be present in the population, a larger 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.

22.   In determining the expected error in a population, auditors would consider such matters as error levels identified in previous audits, changes in the entity's procedures and evidence available from other procedures, including tests of control.

Selection of the sample

23. ***Auditors should select sample items in such a way that the sample can be expected to be representative of the population in respect of the characteristics being tested. (SAS 430.4)***

24. For a sample to be representative of the population, all items in the population are required to have an equal or known probability of being selected.

25. While there are a number of selection methods, three methods commonly used are set out below.

    a. Random selection, which ensures that all items in the population have an equal chance of selection, for example, by use of random number tables.

    b. 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 $1000 increase in the cumulative value of the population). When using systematic selection, auditors would 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 all, or none, of the sales of that particular branch would have been selected.

    c. Judgemental selection, which may be an acceptable alternative to random selection provided the auditors attempt to draw a representative sample from the entire population with no intention to either include or exclude specific units. When auditors use 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

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

    a. ***analyse any errors detected in the sample; and***

    b. ***draw inferences for the population as a whole. (SAS 430.5)***

Analysis of errors in the sample

27. Before analysing the errors detected in the sample, auditors first would determine that an item in question is in fact an error. In designing the sample, auditors define those conditions that constitute an error by reference to the audit objectives. For example, in a substantive procedure relating to the recording of debtors, a misposting between customer accounts does not affect the total debtors. 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.

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

29. Auditors 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.

30. In analysing the errors discovered, auditors may observe that many have a common feature, for example, type of transaction, location, product line or period of time. In such circumstances, auditors 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 area. Auditors would then perform a separate analysis based on the items examined for each sub-population.

Inferences to be drawn for the population as a whole

Projection of errors and re-assessing sampling risk

31. Auditors project the error results of the sample to the population from which the sample was selected in order to form a conclusion about the possible level of error in the population as a whole. The projection of the error results of the sample to the population as a whole involves estimating the probable error in the population by extrapolating the errors found in the sample. When projecting error results, auditors would ensure that the method of projection is consistent with the method used to select the sampling unit. This is in addition to considering the qualitative aspects of the errors found. When the population has been divided into sub-populations, the projection of errors is done separately for each sub-population and the results are combined.

32. Auditors would consider whether errors in the population might exceed the tolerable error. To accomplish this, auditors compare 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, auditors re-assess the sampling risk and if that risk is unacceptable, consider extending the audit procedure or performing alternative audit procedures, either of which may result in them proposing an adjustment to the financial statements.

Compliance with International Standards on Auditing

33. Compliance with the auditing standards contained in this SAS ensures compliance in all material respects with the basic principles and essential procedures in International Standard on Auditing 530 "Audit Sampling".

Effective date

34. This SAS is effective for audits of financial statements for periods beginning before 15 December 2004.

APPENDIX

*SAS 430.3 states that **"when determining sample sizes, auditors should consider sampling risk, the tolerable error and expected error"**. Factors affecting the sample size are set out in the following two tables.*

TABLE 1

Examples of factors influencing sample sizes for tests of control

		Conditions leading to	
Factor		**Smaller sample size**	**Larger sample size**
a.	Preliminary assessment of control risk	Higher preliminary assessment of control risk (1)	Lower preliminary assessment of control risk
b.	Tolerable error	Higher tolerable error (ie. rate of deviation)	Lower tolerable error (ie. rate of deviation)
c.	Acceptable risk of over reliance	Higher acceptable risk of over reliance	Lower acceptable risk of over reliance
d.	Expected error	Lower expected error (ie. rate of deviation) in population	Higher expected error (ie. rate of deviation) in population (2)
e.	Number of items in population	Virtually no effect on sample size unless population is small	

(1)   A high preliminary assessment of control risk may result in a decision not to perform tests of control.

(2)   High expected deviation rates may result in a decision not to perform tests of control.

TABLE 2

Examples of factors influencing sample sizes for substantive procedures

	Conditions leading to	
Factor	**Smaller sample size**	**Larger sample size**
a. Assessment of control risk, supported by tests of control	Lower control risk	Higher control risk
b. Reduction in detection risk because of other substantive tests relating to the same financial statement assertions	Greater use of other substantive tests	Reduced use of other substantive tests
c. Tolerable error	Larger measure of tolerable error	Smaller measure of tolerable error
d. Expected error	Smaller expected errors, individually or in aggregate	Larger expected errors, individually or in aggregate
e. Population value	Smaller monetary significance to the financial statements	Larger monetary significance to the financial statements
f. Number of items in population	Virtually no effect on sample size unless population is small	
g. Acceptable level of detection risk	Higher acceptable level of detection risk	Lower acceptable level of detection risk
h. Stratification	Stratification of the population, if appropriate	No stratification of the population