ASA 530
(April 2006)

Auditing Standard ASA 530
Audit Sampling and Other Means of Testing

Issued by the **Auditing and Assurance Standards Board**

Australian Government
Auditing and Assurance Standards Board

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Alternatively, printed copies of this Auditing Standard are available by contacting:

Auditing and Assurance Standards Board
Level 4
530 Collins Street
Melbourne Victoria 3000
AUSTRALIA

Phone: (03) 8080 7400
Fax: (03) 8080 7450
E-mail: enquiries@auasb.gov.au

Postal Address:
PO Box 204
Collins Street West
Melbourne Victoria 8007
AUSTRALIA

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PREFACE

Reasons for Issuing Auditing Standard ASA 530 *Audit Sampling and Other Means of Testing*

The Auditing and Assurance Standards Board (AUASB) issues Auditing Standard ASA 530 *Audit Sampling and Other Means of Testing* due to the requirements of the legislative provisions explained below.

The *Corporate Law Economic Reform Program (Audit Reform and Corporate Disclosure) Act 2004* (the CLERP 9 Act) established the AUASB as an independent statutory body under section 227A of the *Australian Securities and Investments Commission Act 2001*, as from 1 July 2004. Under section 336 of the *Corporations Act 2001*, the AUASB may make Auditing Standards for the purposes of the corporations legislation. These Auditing Standards are legislative instruments under the *Legislative Instruments Act 2003*.

Main Features

This Auditing Standard provides mandatory requirements and explanatory guidance on the use of audit sampling and other means of selecting items for testing when designing audit procedures to gather sufficient appropriate audit evidence.

Operative Date

This Auditing Standard is operative for financial reporting periods commencing on or after 1 July 2006.

Main changes from AUS 514 (April 1998) *Audit Sampling and Other Selective Testing Procedures*

The main differences between this Auditing Standard and the Auditing Standard issued by the Auditing & Assurance Standards Board of the Australian Accounting Research Foundation, AUS 514 (April 1998) *Audit Sampling and Other Selective Testing Procedures*, are that in this Auditing Standard:

1. The word 'shall', in the **bold-type** paragraphs, is the terminology used to describe an auditor's mandatory requirements, whereas an auditor's degree of responsibility is described in AUS 514 by the word 'should'.

2. The explanatory guidance paragraphs provide guidance and illustrative examples to assist the auditor in fulfilling the mandatory requirements, whereas in AUS 514 some obligations are implied within certain explanatory paragraphs. Accordingly, such paragraphs have been redrafted to clarify that the matter forms part of the explanatory guidance.

AUTHORITY STATEMENT

The Auditing and Assurance Standards Board (AUASB) makes Auditing Standard ASA 530 *Audit Sampling and Other Means of Testing*, as set out in paragraphs 1 to 66 and Appendices 1 to 3, pursuant to section 227B of the *Australian Securities and Investments Commission Act 2001* and section 336 of the *Corporations Act 2001*.

This Auditing Standard is to be read in conjunction with the *Preamble to AUASB Standards*, which sets out the intentions of the AUASB on how the Auditing Standards are to be understood, interpreted and applied.

The mandatory requirements of this Auditing Standard are set out in **bold-type** paragraphs.

Dated 28 April 2006

M H Kelsall
Chairman - AUASB

AUDITING STANDARD ASA 530

Audit Sampling and Other Means of Testing

Application

1 This Auditing Standard applies to:

(a) an audit of a financial report for a financial year, or an audit of a financial report for a half-year, in accordance with Part 2M.3 of the *Corporations Act 2001*; and

(b) an audit of a financial report for any other purpose.

2 This Auditing Standard also applies, as appropriate, to an audit of other financial information.

Operative Date

3 This Auditing Standard is operative for financial reporting periods commencing on or after 1 July 2006.

Introduction

4 The purpose of this Auditing Standard is to establish mandatory requirements and to provide explanatory guidance on the use of audit sampling and other means of selecting items for testing when designing audit procedures to gather sufficient appropriate audit evidence.

5 When designing audit procedures, the auditor shall determine appropriate means for selecting items for testing so as to gather sufficient appropriate audit evidence to meet the objectives of the audit procedures.

Definitions

6 "Audit sampling" (sampling) means a process which includes the application of audit procedures to less than 100% of items within a class of transactions or account balance such that all sampling units have a chance of selection. This will 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 from which the sample is drawn. Audit sampling can use either a statistical or a non-statistical approach.

7 For purposes of this Auditing Standard, "error" means either control deviations, when performing tests of controls, or misstatements, when performing tests of details. Similarly, total error is used to mean either the rate of deviation or total misstatement.

8 "Anomalous error" means an error that arises from an isolated event that has not recurred other than on specifically identifiable occasions and is therefore not representative of errors in the population.

9 "Population" means the entire set of data from which a sample is selected and about which the auditor wishes to draw conclusions. For example, all of the items in a class of transactions or account balance constitute a population. A population may be divided into strata, or sub-populations, with each stratum being examined separately. The term population is used to include the term stratum.

10 "Sampling risk" means the risk arising from the possibility that the auditor's conclusion, based on a sample may be different from the conclusion reached if the entire population were subjected to the same audit procedure. There are two types of sampling risk:

(a) the risk the auditor will conclude, in the case of a test of controls, that controls are more effective than they actually are, or in the case of a test of details, that a material error does not exist when in fact it does. This type of risk affects audit effectiveness and is more likely to lead to an inappropriate audit opinion; and

(b) the risk the auditor will conclude, in the case of a test of controls, that controls are less effective than they actually are, or in the case of a test of details, that a material error exists when in fact it does not. This type of risk affects audit efficiency as it would usually lead to additional work to establish that initial conclusions were incorrect.

The mathematical complements of these risks are termed confidence levels.

11 "Non-sampling risk" means the risk arising from factors that cause the auditor to reach an erroneous conclusion for any reason not related to the size of the sample. For example, ordinarily, the auditor finds it necessary to rely on audit evidence that is persuasive rather than conclusive, the auditor might use inappropriate audit

procedures, or the auditor might misinterpret audit evidence and fail to recognise an error.

12 "Sampling unit" means the individual items constituting a population, for example cheques listed on deposit slips, credit entries on bank statements, sales invoices or debtors' balances, or a monetary unit.

13 "Statistical sampling" means any approach to sampling that has the following characteristics:

(a) random selection of a sample; and

(b) use of probability theory to evaluate sample results, including measurement of sampling risk.

A sampling approach that does not have characteristics (a) and (b) is considered to be non-statistical sampling.

14 "Stratification" means the process of dividing a population into subpopulations, each of which is a group of sampling units which have similar characteristics (often monetary value).

15 "Tolerable error" means the maximum error in a population that the auditor is willing to accept.

Audit Evidence

16 In accordance with ASA 500 *Audit Evidence*, audit evidence is obtained by performing risk assessment procedures, tests of controls and substantive procedures. The type of audit procedure to be performed is important to an understanding of the application of audit sampling in gathering audit evidence.

Risk Assessment Procedures

17 In accordance with ASA 315 *Understanding the Entity and Its Environment and Assessing the Risks of Material Misstatement*, the auditor is required to perform risk assessment procedures to obtain an understanding of the entity and its environment, including its internal control. Ordinarily, risk assessment procedures do not involve the use of audit sampling. However, the auditor often plans and performs tests of controls concurrently with obtaining an understanding of the design of controls and determining whether they have been implemented. In such cases, the following discussion of tests of controls is relevant.

Test of Controls

18 Under ASA 330 *The Auditor's Procedures in Response to Assessed Risks*, the auditor needs to perform tests of controls when the auditor's risk assessment includes an expectation of the operating effectiveness of controls.

19 Under ASA 330, and based on the auditor's understanding of internal control, the auditor needs to identify the characteristics or attributes that indicate performance of a control, as well as possible deviation conditions which indicate departures from adequate performance. The presence or absence of attributes can then be tested by the auditor.

20 Audit sampling for tests of controls is generally appropriate when application of the control leaves audit evidence of performance (for example, initials of the credit manager on a sales invoice indicating credit approval, or evidence of authorisation of data input to a microcomputer based data processing system).

Substantive Procedures

21 Substantive procedures are concerned with amounts and are of two types: tests of details of classes of transactions, account balances, and disclosures and substantive analytical procedures. The purpose of substantive procedures is to obtain audit evidence to detect material misstatements at the assertion level. In the context of substantive procedures, audit sampling and other means of selecting items for testing, as discussed in this Auditing Standard, relate only to tests of details. When performing tests of details, audit sampling and other means of selecting items for testing and gathering audit evidence may be used to verify one or more assertions about a financial report amount (for example, the existence of accounts receivable), or to make an independent estimate of some amount (for example, the value of obsolete inventories).

Risk Considerations in Obtaining Audit Evidence

22 In obtaining audit evidence, the auditor shall use professional judgement to assess the risk of material misstatement and design further audit procedures to ensure this risk is reduced to an acceptably low level.

23 Sampling risk and non-sampling risk can affect the components of the risk of material misstatement. For example, when performing tests of controls, the auditor may find no errors in a sample and conclude that controls are operating effectively, when the rate of

error in the population is, in fact, unacceptably high (sampling risk). Or there may be errors in the sample which the auditor fails to recognise (non-sampling risk). With respect to substantive procedures, the auditor may use a variety of methods to reduce detection risk to an acceptable level. Depending on their nature, these methods will be subject to sampling and/or non-sampling risks. For example, the auditor may choose an inappropriate substantive analytical procedure (non-sampling risk) or may find only minor misstatements in a test of details when, in fact, the population misstatement is greater than the tolerable amount (sampling risk). For both tests of controls and substantive tests of details, sampling risk can be reduced by increasing sample size, while non-sampling risk can be reduced by proper engagement planning supervision and review.

Audit Procedures for Obtaining Audit Evidence

24 Audit procedures for obtaining audit evidence include inspection, observation, enquiry and confirmation, recalculation, reperformance and analytical procedures. The choice of appropriate audit procedures is a matter of professional judgement in the circumstances. Application of these audit procedures will often involve the selection of items for testing from a population. ASA 500 contains explanatory guidance on audit procedures for obtaining audit evidence.

Selecting Items for Testing to Gather Audit Evidence

25 When designing audit procedures, the auditor shall determine appropriate means of selecting items for testing.

26 The means available to the auditor are:

(a) selecting all items (100% examination);

(b) selecting specific items; and

(c) audit sampling.

27 Ordinarily, the decision as to which approach to use will depend on the circumstances, and the application of any one or combination of the above means may be appropriate in particular circumstances. While the decision as to which means, or combination of means, to use is made on the basis of the risk of material misstatement related to the assertion being tested and audit efficiency, the auditor ordinarily gains satisfaction that methods used are effective in

providing sufficient appropriate audit evidence to meet the objectives of the audit procedure.

Selecting All Items

28 The auditor may decide that it will be most appropriate to examine the entire population of items that make up a class of transactions or account balance (or a stratum within that population). 100% examination is unlikely in the case of tests of controls; however, it is more common for tests of details. For example, 100% examination may be appropriate when the population constitutes a small number of large value items, when there is a significant risk and other means do not provide sufficient appropriate audit evidence, or when the repetitive nature of a calculation or other process performed automatically by an information system makes a 100% examination cost effective, for example, through the use of computer-assisted audit techniques (CAATs).

Selecting Specific Items

29 The auditor may decide to select specific items from a population based on such factors as the auditor's understanding of the entity, the assessed risk of material misstatement, and the characteristics of the population being tested. The judgemental selection of specific items is subject to non-sampling risk. Specific items selected may include:

- *High value or key items.* The auditor may decide to select specific items within a population because they are of high value, or exhibit some other characteristic, for example items that are suspicious, unusual, particularly risk-prone or that have a history of error.

- *All items over a certain amount*. The auditor may decide to examine items whose values exceed a certain amount so as to verify a large proportion of the total amount of class of transactions or account balance.

- *Items to obtain information.* The auditor may examine items to obtain information about matters such as the nature of the entity, the nature of transactions, and internal control.

- *Items to test control activities*. The auditor may use judgement to select and examine specific items to determine whether or not a particular control activity is being performed.

30 While selective examination of specific items from a class of transactions or account balance will often be an efficient means of gathering audit evidence, it does not constitute audit sampling. The results of audit procedures applied to items selected in this way cannot be projected to the entire population. Under paragraph 25 of this Auditing Standard, the auditor needs to consider the approach needed to obtain sufficient appropriate audit evidence regarding the remainder of the population when that remainder is material.

Audit Sampling

31 The auditor may decide to apply audit sampling to a class of transactions or account balance. Audit sampling can be applied using either non-statistical or statistical sampling methods. Audit sampling is discussed in detail in paragraphs 35-65.

Statistical versus Non-Statistical Sampling Approaches

32 The decision whether to use a statistical or non-statistical sampling approach is a matter for the auditor's judgement regarding the most efficient manner to obtain sufficient appropriate audit evidence in the particular circumstances. For example, in the case of tests of controls the auditor's analysis of the nature and cause of errors will often be more important than the statistical analysis of the mere presence or absence (that is, the count) of errors. In such a situation, non-statistical sampling may be most appropriate.

33 When applying statistical sampling, the sample size can be determined using either probability theory or professional judgement. Moreover, sample size is not a valid criterion to distinguish between statistical and non-statistical approaches. Sample size is a function of factors such as those identified in Appendices 1 and 2. When circumstances are similar, the effect on sample size of factors such as those identified in Appendices 1 and 2 will be similar regardless of whether a statistical or non-statistical approach is chosen.

34 Often, while the approach adopted does not meet the definition of statistical sampling, elements of a statistical approach are used, for example the use of random selection using computer generated random numbers. However, only when the approach adopted has the characteristics of statistical sampling are statistical measurements of sampling risk valid.

Design of the Sample

35 When designing an audit sample, the auditor shall consider the objectives of the audit procedure and the attributes of the population from which the sample will be drawn.

36 Under paragraph 35 of this Auditing Standard, the auditor needs to first consider the specific objectives to be achieved and the combination of audit procedures which is likely to best achieve those objectives. Consideration of the nature of the audit evidence sought and possible error conditions or other characteristics relating to that audit evidence will ordinarily assist the auditor in defining what constitutes an error and what population to use for sampling.

37 The auditor ordinarily considers what conditions constitute an error by reference to the objectives of the audit procedure. A clear understanding of what constitutes an error is important to ensure that all, and only, those conditions that are relevant to the objectives of the audit procedure are included in the projection of errors. For example, in a test of details relating to the existence of accounts receivable, such as confirmation, payments made by the customer before the confirmation date but received shortly after that date by the client are not considered an error. Also, a misposting between customer accounts does not affect the total accounts receivable balance. Therefore, it is not appropriate to consider this an error in evaluating the sample results of this particular audit procedure, even though it may have an important effect on other areas of the audit, such as the assessment of the likelihood of fraud or the adequacy of the allowance for doubtful accounts.

38 When performing tests of controls, the auditor generally makes an assessment of the rate of error the auditor expects to find in the population to be tested. Ordinarily, this assessment is based on the auditor's understanding of the design of the relevant controls and whether they have been implemented or the examination of a small number of items from the population. Similarly, for tests of details, the auditor generally makes an assessment of the expected amount of error in the population. These assessments are ordinarily useful for designing an audit sample and in determining sample size. For example, if the expected rate of error is unacceptably high, tests of controls will normally not be performed. However, when performing tests of details, if the expected amount of error is high, 100% examination or the use of a large sample size may be appropriate.

Population

39 Under paragraph 35 of this Auditing Standard, the auditor needs to obtain reasonable assurance that the population is:

(a) *appropriate* to the objective of the audit procedure, which will include consideration of the direction of testing. For example, if the auditor's objective is to test for overstatement of accounts payable, the population could be defined as the accounts payable listing. On the other hand, when testing for understatement of accounts payable, the population is not the accounts payable listing but rather subsequent disbursements, unpaid invoices, suppliers' statements, unmatched receiving reports or other populations that provide audit evidence of understatement of accounts payable; and

(b) *complete*. For example, if the auditor intends to select payment vouchers from a file, conclusions cannot be drawn about all vouchers for the period unless the auditor is satisfied that all vouchers have in fact been filed. Similarly, if the auditor intends to use the sample to draw conclusions about whether a control activity operated effectively during the financial reporting period, the population would include all relevant items from throughout the entire period. A different approach may be to stratify the population and use sampling only to draw conclusions about the control activity during, say, the first 10 months of a year, and to use alternative audit procedures or a separate sample regarding the remaining two months. ASA 330 contains additional explanatory guidance on performing audit procedures at an interim period.

40 Under ASA 500, the auditor needs to obtain audit evidence about the accuracy and completeness of information produced by the entity's information system when that information is used in performing audit procedures. When performing audit sampling, the auditor performs audit procedures ordinarily to ensure that the information upon which the audit sampling is performed is sufficiently complete and accurate. ASA 500 contains additional explanatory guidance on the audit procedures to perform regarding the accuracy and completeness of such information.

Stratification

41 Audit efficiency may be improved if the auditor stratifies a population by dividing it into discrete sub-populations which have an identifying characteristic. The objective of stratification is to reduce the variability of items within each stratum and therefore allow sample size to be reduced without a proportional increase in sampling risk. Sub-populations need to be carefully defined such that any sampling unit can only belong to one stratum.

42 When performing tests of details, a class of transaction or account balance is often stratified by monetary value. Ordinarily, this allows greater audit effort to be directed to the larger value items which may contain the greatest potential monetary error in terms of overstatement. Similarly, a population may be stratified according to a particular characteristic that indicates a higher risk of error, for example, when testing the valuation of accounts receivable, balances may be stratified by age.

43 The results of audit procedures applied to a sample of items within a stratum can only be projected to the items that make up that stratum. To draw a conclusion on the entire population, under paragraph 22 of this Auditing Standard, the auditor needs to consider the risk of material misstatement in relation to whatever other strata make up the entire population. For example, 20% of the items in a population may make up 90% of the value of an account balance. The auditor may decide to examine a sample of these items. The auditor evaluates the results of this sample and reaches a conclusion on the 90% of value separately from the remaining 10% (on which a further sample or other means of gathering audit evidence will be used, or which may be considered immaterial).

Value Weighted Selection

44 It will often be efficient in performing tests of details, particularly when testing for overstatements, to identify the sampling unit as the individual monetary units (for example, dollars) that make up a class of transactions or account balance. Having selected specific monetary units from within the population, for example, the accounts receivable balance, the auditor then examines the particular items, for example, individual balances, that contain those monetary units. This approach to defining the sampling unit ordinarily ensures that audit effort is directed to the larger value items because they have a greater chance of selection, and can result in smaller sample sizes. This approach is ordinarily used in conjunction with the systematic method of sample selection (described in Appendix 3) and is most efficient when selecting items using CAATs.

Sample Size

45 In determining the sample size, the auditor shall consider whether sampling risk is reduced to an acceptably low level.

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

47 The sample size can be determined by the application of a statistically-based formula or through the exercise of professional judgement objectively applied to the circumstances. Appendices 1 and 2 indicate the influences that various factors typically have on the determination of sample size, and hence the level of sampling risk.

Selecting the Sample

48 The auditor shall select items for the sample with the expectation that all sampling units in the population have a chance of selection.

49 Statistical sampling requires that sample items are selected at random so that each sampling unit has a known chance of being selected. The sampling units might be physical items (such as invoices) or monetary units. With non-statistical sampling, an auditor uses professional judgement to select the items for a sample. Because the purpose of sampling is to draw conclusions about the entire population, under paragraph 48 of this Auditing Standard, the auditor needs to:

- select a representative sample by choosing sample items which have characteristics typical of the population; and
- select the sample so that bias is avoided.

50 The principal methods of selecting samples are the use of random number tables or CAATs, systematic selection and haphazard selection. Each of these methods is discussed in Appendix 3.

Performing the Audit Procedure

51 The auditor shall perform audit procedures appropriate to the particular audit objective on each item selected.

52 If a selected item is not appropriate for the application of the audit procedure, the audit procedure is ordinarily performed on a replacement item. For example, a voided cheque may be selected when testing for evidence of payment authorisation. If the auditor is satisfied that the cheque had been properly voided such that it does not constitute an error, an appropriately chosen replacement is examined.

53 Sometimes however, the auditor is unable to apply the designed audit procedures to a selected item because, for instance, documentation relating to that item has been lost. If suitable alternative audit procedures cannot be performed on that item, the auditor ordinarily considers that item to be in error. An example of a suitable alternative audit procedure might be the examination of subsequent receipts when no reply has been received in response to a positive confirmation request.

Nature and Cause of Errors

54 The auditor shall consider the sample results, the nature and cause of any errors identified, and their possible effect on the particular audit objective and on other areas of the audit.

55 When performing tests of controls, the auditor is primarily concerned with obtaining audit evidence that controls operated effectively throughout the period of reliance. This includes obtaining audit evidence about how controls were applied at relevant times during the period under audit, the consistency with which they were applied, and by whom or by what means they were applied. The concept of effectiveness of the operation of controls recognises that some errors in the way controls are applied by the entity may occur. However, when such errors are identified, the auditor ordinarily makes specific enquiries to understand these matters and also considers matters such as:

- the direct effect of identified errors on the financial report; and
- the effectiveness of internal control and their effect on the audit approach when, for example, the errors result from management override of a control.

In these cases, the auditor ordinarily determines whether the tests of controls performed provide an appropriate basis for use as audit evidence, whether additional tests of controls are necessary, or whether the potential risks of misstatement need to be addressed using substantive procedures.

56 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 that possess the common feature, and extend audit procedures in that stratum. In addition, such errors may be intentional, and may indicate the possibility of fraud.

57 Sometimes, the auditor may be able to establish that an error arises from an isolated event that has not recurred other than on specifically identifiable occasions and is, therefore, not representative of similar errors in the population (an anomalous error). Under paragraph 54, the auditor needs to obtain sufficient appropriate audit evidence by performing further audit procedures to be satisfied that errors which are suspected to be anomalous errors are not representative of the population. One example is an error caused by a computer breakdown that is known to have occurred on only one day during the period. In that case, the auditor ordinarily assesses the effect of the breakdown, for example by examining specific transactions processed on that day, and considers the effect of the cause of the breakdown on audit procedures and conclusions. Another example is an error that is found to be caused by use of an incorrect formula in calculating all inventory values at one particular branch. To establish that this is an anomalous error, the auditor ordinarily ensures the correct formula has been used at other branches.

Projecting Errors

58 For tests of details, the auditor shall project monetary errors found in the sample to the population, and shall consider the effect of the projected error on the particular audit objective and on other areas of the audit.

59 Under paragraph 58 of this Auditing Standard, the auditor needs to project the total error for the population to obtain a broad view of the scale of errors, and to compare this to the tolerable error. For tests of details, tolerable error is the tolerable misstatement, and will be an amount less than or equal to the auditor's materiality used for the individual class of transactions or account balances being audited.

60 Under paragraph 58 of this Auditing Standard, when an error has been established as an anomalous error, the auditor needs to exclude the error when projecting sample errors to the population. Under paragraph 58, the auditor needs to consider the effect of any such error, if uncorrected, in addition to the projection of the non-anomalous errors. If a class of transactions or account balance has

been divided into strata, the error is projected for each stratum separately. Projected errors plus anomalous errors for each stratum are then combined when considering the possible effect of errors on the total class of transactions or account balance.

61 For tests of controls, no explicit projection of errors is necessary since the sample error rate is also the projected rate of error for the population as a whole.

Evaluating the Sample Results

62 The auditor shall evaluate the sample results to determine whether the assessment of the relevant characteristic of the population is confirmed or needs to be revised.

63 In the case of tests of controls, an unexpectedly high sample error rate may lead to an increase in the assessed risk of material misstatement, unless further audit evidence substantiating the initial assessment is obtained. In the case of tests of details, an unexpectedly high error amount in a sample may cause the auditor to believe that a class of transactions or account balance is materially misstated, in the absence of further audit evidence that no material misstatement exists.

64 If the total amount of projected error plus anomalous error is less than but close to that which the auditor deems tolerable, the auditor ordinarily considers the persuasiveness of the sample results in the light of other audit procedures, and may consider it appropriate to obtain additional audit evidence. The total of projected error plus anomalous error is the auditor's best estimate of error in the population. However, sampling results are affected by sampling risk. Thus when the best estimate of error is close to the tolerable error, the auditor ordinarily recognises the risk that a different sample would result in a different best estimate that could exceed the tolerable error. Considering the results of other audit procedures helps the auditor to assess this risk, while the risk is reduced if additional audit evidence is obtained.

65 If the evaluation of sample results indicates that the assessment of the relevant characteristic of the population needs to be revised, the auditor may:

(a) request management to investigate identified errors and the potential for further errors, and to make any necessary adjustments;

(b) modify the nature, timing and extent of further audit procedures. For example, in the case of tests of controls, the auditor might extend the sample size, test an alternative control or modify related substantive procedures; and/or

(c) consider the effect on the auditor's report.

Conformity with International Standards on Auditing

66 This Auditing Standard conforms with International Standard on Auditing ISA 530 *Audit Sampling and Other Means of Testing*, issued by the International Auditing and Assurance Standards Board of the International Federation of Accountants.

Compliance with this Auditing Standard enables compliance with ISA 530.

APPENDIX 1

EXAMPLES OF FACTORS INFLUENCING SAMPLE SIZE FOR TESTS OF CONTROLS

The following are factors that the auditor ordinarily considers when determining the sample size for tests of controls. These factors, which need to be considered together, assume the auditor does not modify the nature or timing of tests of controls or otherwise modify the approach to substantive procedures in response to assessed risks.

FACTOR	EFFECT ON SAMPLE SIZE
An increase in the extent to which the risk of material misstatement is reduced by the operating effectiveness of controls	Increase
An increase in the rate of deviation from the prescribed control activity that the auditor is willing to accept	Decrease
An increase in the rate of deviation from the prescribed control activity that the auditor expects to find in the population	Increase
An increase in the auditor's required confidence level (or conversely, a decrease in the risk that the auditor will conclude that the risk of material misstatement is lower than the actual risk of material misstatement in the population)	Increase
An increase in the number of sampling units in the population	Negligible effect

(a) *The extent to which the risk of material misstatement is reduced by the operating effectiveness of controls.* The more assurance the auditor intends to obtain from the operating effectiveness of controls, the lower the auditor's assessment of the risk of material misstatement will be, and the larger the sample size will need to be. When the auditor's assessment of the risk of material misstatement at the assertion level includes an expectation of the operating effectiveness of controls, under ASA 330, the auditor needs to perform tests of controls. Other things being equal, the more the auditor relies on the operating effectiveness of controls in the risk assessment, the greater is the extent of the auditor's tests of controls (and therefore, the sample size is increased).

(b) *The rate of deviation from the prescribed control activity the auditor is willing to accept (tolerable error).* The lower the rate of deviation that the auditor is willing to accept, the larger the sample size needs to be.

(c) *The rate of deviation from the prescribed control activity the auditor expects to find in the population (expected error).* The higher the rate of deviation that the auditor expects, the larger the sample size needs to be so as to be in a position to make a reasonable estimate of the actual rate of deviation. Ordinarily, factors relevant to the auditor's consideration of the expected error rate include the auditor's understanding of the business (in particular, risk assessment procedures undertaken to obtain an understanding of internal control), changes in personnel or in internal control, the results of audit procedures applied in prior periods and the results of other audit procedures. High expected error rates ordinarily warrant little, if any, reduction of the assessed risk of material misstatement, and therefore in such circumstances tests of controls would ordinarily be omitted.

(d) *The auditor's required confidence level.* The greater the degree of confidence that the auditor requires that the results of the sample are in fact indicative of the actual incidence of error in the population, the larger the sample size needs to be.

(e) *The number of sampling units in the population.* For large populations, the actual size of the population has little, if any, effect on sample size. For small populations however, audit sampling is often not as efficient as alternative means of obtaining sufficient appropriate audit evidence.

APPENDIX 2

EXAMPLES OF FACTORS INFLUENCING SAMPLE SIZE FOR TESTS OF DETAILS

The following are factors that the auditor ordinarily considers when determining the sample size for tests of details. These factors, which need to be considered together, assume the auditor does not modify the approach to tests of controls or otherwise modify the nature or timing of substantive procedures in response to the assessed risks.

FACTOR	EFFECT ON SAMPLE SIZE
An increase in the auditor's assessment of the risk of material misstatement	Increase
An increase in the use of other substantive procedures directed at the same assertion	Decrease
An increase in the auditor's required confidence level (or conversely, a decrease in the risk that the auditor will conclude that a material error does not exist, when in fact it does exist)	Increase
An increase in the total error that the auditor is willing to accept (tolerable error)	Decrease
An increase in the amount of error the auditor expects to find in the population	Increase
Stratification of the population when appropriate	Decrease
The number of sampling units in the population	Negligible Effect

(a) *The auditor's assessment of the risk of material misstatement.* The higher the auditor's assessment of the risk of material misstatement, the larger the sample size needs to be. The auditor's assessment of the risk of material misstatement is affected by inherent risk and control risk. For example, if the auditor does not perform tests of controls, the auditor's risk assessment cannot be reduced for the effective operation of internal controls with respect to the particular assertion. Therefore, in order to reduce audit risk to an acceptably low level, the auditor needs a low detection risk and will rely more on substantive procedures. The more audit evidence that is obtained

from tests of details (that is, the lower the detection risk), the larger the sample size will need to be.

(b) *The use of other substantive procedures directed at the same assertion.* The more the auditor is relying on other substantive procedures (tests of details or substantive analytical procedures) to reduce to an acceptable level the detection risk regarding a particular class of transactions or account balance, the less assurance the auditor will require from sampling and, therefore, the smaller the sample size can be.

(c) *The auditor's required confidence level.* The greater the degree of confidence that the auditor requires that the results of the sample are in fact indicative of the actual amount of error in the population, the larger the sample size needs to be.

(d) *The total error the auditor is willing to accept (tolerable error).* The lower the total error that the auditor is willing to accept, the larger the sample size needs to be.

(e) *The amount of error the auditor expects to find in the population (expected error).* The greater the amount of error the auditor expects to find in the population, the larger the sample size needs to be in order to make a reasonable estimate of the actual amount of error in the population. Ordinarily, factors relevant to the auditor's consideration of the expected error amount include the extent to which item values are determined subjectively, the results of risk assessment procedures, the results of tests of control, the results of audit procedures applied in prior periods, and the results of other substantive procedures.

(f) *Stratification.* When there is a wide range (variability) in the monetary size of items in the population. It may be useful to group items of similar size into separate sub-populations or strata. This is referred to as stratification. When a population can be appropriately stratified, the aggregate of the sample sizes from the strata generally will be less than the sample size that would have been required to attain a given level of sampling risk, had one sample been drawn from the whole population.

(g) *The number of sampling units in the population.* For large populations, the actual size of the population has little, if any, effect on sample size. Thus, for small populations, audit sampling is often not as efficient as alternative means of obtaining sufficient appropriate audit evidence. (However, when using monetary unit sampling, an increase in the monetary value of the population

increases sample size, unless this is offset by a proportional increase in materiality.)

APPENDIX 3

SAMPLE SELECTION METHODS

The principal methods of selecting samples are as follows:

(a) Use of a computerised random number generator (through CAATs) or random number tables.

(b) Systematic selection, in which the number of sampling units in the population is divided by the sample size to give a sampling interval, for example 50, and having determined a starting point within the first 50, each 50th sampling unit thereafter is selected. Although the starting point may be determined haphazardly, the sample is more likely to be truly random if it is determined by use of a computerised random number generator or random number tables. When using systematic selection, the auditor would need to determine that sampling units within the population are not structured in such a way that the sampling interval corresponds with a particular pattern in the population.

(c) Haphazard selection, in which the auditor selects the sample without following a structured technique. Although no structured technique is used, the auditor would nonetheless avoid any conscious bias or predictability (for example, avoiding difficult to locate items, or always choosing or avoiding the first or last entries on a page) and thus attempt to ensure that all items in the population have a chance of selection. Haphazard selection is not appropriate when using statistical sampling.

(d) Block selection involves selecting a block(s) of contiguous items from within the population. Block selection cannot ordinarily be used in audit sampling because most populations are structured such that items in a sequence can be expected to have similar characteristics to each other, but different characteristics from items elsewhere in the population. Although in some circumstances it may be an appropriate audit procedure to examine a block of items, it would rarely be an appropriate sample selection technique when the auditor intends to draw valid inferences about the entire population based on the sample.