
MMASA Summary ©

ISA 530: Audit Sampling and Other Means of Testing

Summary & interpretation of ISA 530, incorporating aspects of general audit theory

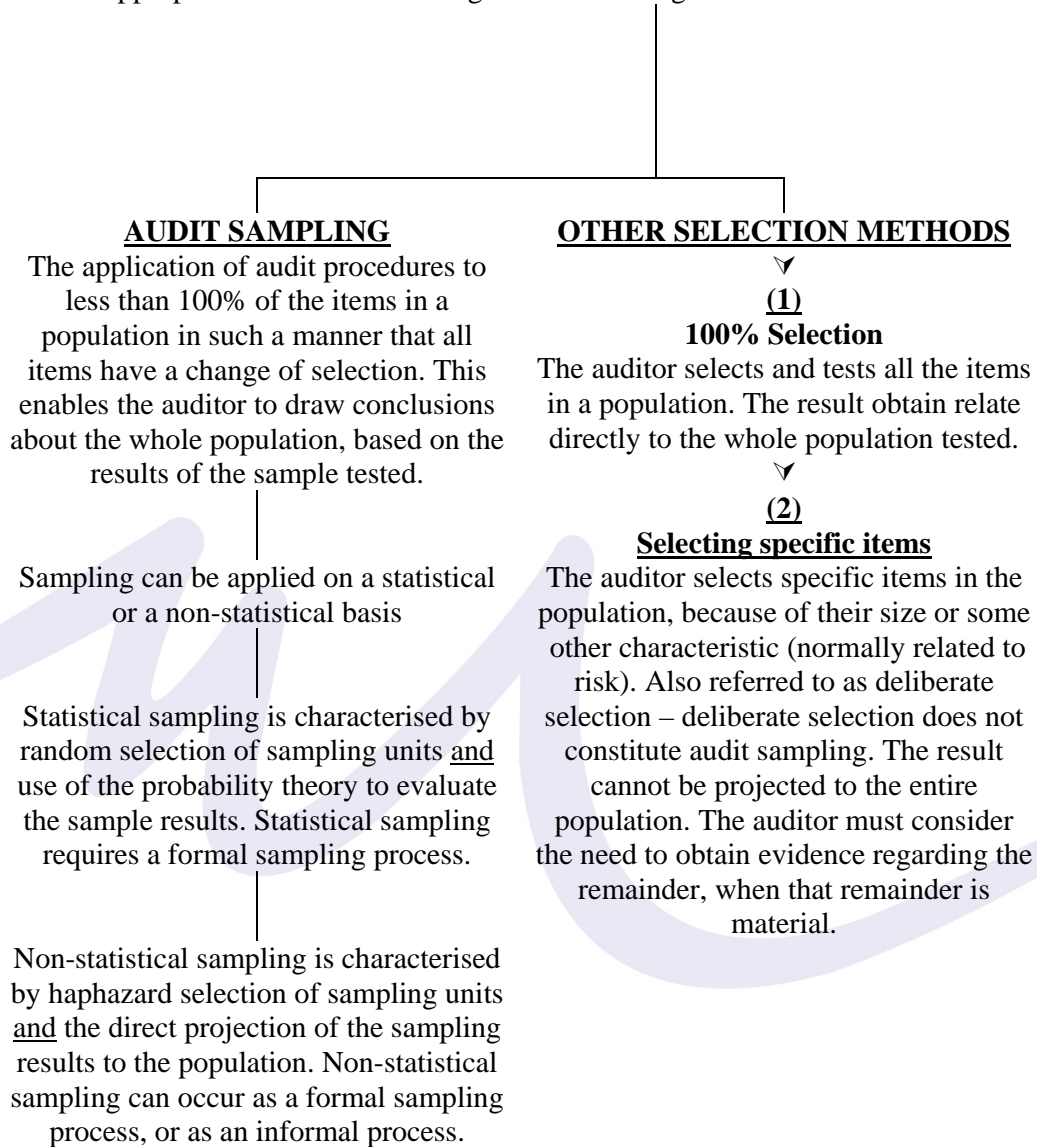
1 Summary of basic principles and essential procedures

- Part of designing audit procedures is determining appropriate means for selecting items for testing so as to gather audit evidence to meet the objectives of audit tests. The auditor uses professional judgement to assess audit risk, and design audit procedures to ensure this risk is reduced to an acceptably low level.
- Consider the following when designing an audit sample:
 - The objectives of the test
 - The attributes of the population from which the sample will be drawn.
 - The sample size. In determining sample size, consider whether or not sampling risk is reduced to an acceptably low level.
 - The selection of items from the sample. Items should be selected with the expectation that all sampling units in the population have a chance of selection.
- Perform audit procedures appropriate to the particular test objective on each item selected.
- In respect of the sample results obtained:
 - Consider the nature and cause of any errors identified and their possible effect on the particular test objective and on other areas of the audit.
 - For substantive procedures, project monetary errors to the population, and consider the effect of the projected error on the particular test objective and on other areas of the audit.
 - Determine whether or not the preliminary assessment of the relevant characteristic of the population is confirmed or needs to be revised.

2 Background information and basic decisions and principles

- The ISA relating to audit evidence (ISA 500) states that the auditor does not need to examine all the available information. Conclusions can be reached by way of using judgemental or statistical sampling procedures.
- When designing audit procedures to test a financial statements item (class of transactions or balance/total), the auditor should decide on appropriate means for selecting items for testing.

What are appropriate means for selecting items for testing? What is available?



- The decision whether or not to apply sampling or other selection methods is a matter of professional judgement. The auditor would consider factors such as efficiency considerations, the size of the population, specific risks identified, etc.

Overall, the auditor must be satisfied that the method chosen is effective in the circumstances to provide sufficient appropriate audit evidence to meet the objectives of the test concerned.

100% selection may be appropriate when:

- The population constitutes a small number of large value items.
- When there is a significant risk.
- Other means of selection do not provide sufficient, appropriate audit evidence.

- IT makes a 100% examination cost effective (e.g. through the use of CAATS).

Specific items selected may include (deliberate selection):

- High risk, or risk prone items
 - Items that have a history of error
 - All items over a certain amount (high value items)
 - Specific items to obtain specific information about the nature of the entity, the nature of transactions and internal control.
 - Specific items to determine whether a particular control activity is being performed.
- The decision whether to apply statistical sampling or non-statistical sampling is a matter of professional judgement. The auditor would consider factors such as efficiency considerations, the importance of specific characteristics of the sampling units, the ability to define the population in clear and measurable terms, the size of the population, the expected ease of accessing selected items, etc.



It is important to note that sample size is not a valid criterion to distinguish between statistical and non-statistical sampling. The identifying characteristics of statistical sampling have been identified, above.

3 Appropriate definitions relating to selecting items for testing

- “Error” refers to a control deviation in the case of tests of control (often expressed as a total deviation rate), or a misstatement in the case of tests of details (substantive procedures) (expressed as a total R-value misstatement).
- “Anomalous error” is an error that is not representative of errors in the population, because it arises from an isolated event that has not recurred other than on specifically identifiable occasions.
- “Tolerable error” refers to the maximum error in a population that the auditor is willing to accept. In the case of tests of control tolerable error is expressed as a tolerable deviation rate, and in the case of substantive procedures it is related to the auditor’s quantitative materiality level.
- “Population” refers to the entire set of data from which items will be selected for testing. A population can be divided into strata or sub-populations, with each stratum being examined separately – this is referred to a stratification.
- “Sampling unit” refers to the individual items constituting a population.

“Sampling risk” is the risk that the auditor’s conclusion regarding the population, based on the sample, may be different from what the conclusion would have been, had the entire population been tested (refer to ISA 530, par.07). The complement (inverse) of sampling risk, is the auditor’s confidence level. Generally, sampling risk can be reduced by increasing the sample size.

- “Non-sampling risk” is the risk that the auditor reaches an erroneous conclusion for any reason not related to the size of the sample (e.g. the auditor uses inappropriate procedures, or misinterprets evidence, or fails to recognise an error). Generally, non-sampling risk can be reduced by proper engagement planning, supervision and review.

4 Determining sample size and selecting the sample

- Sample size is influenced by the same factors whether statistical sampling or non-statistical sampling is being applied.
- When applying statistical sampling, the sample size can be determined using either probability theory or professional judgement.
- When applying non-statistical sampling, the sample size is determined using professional judgement.
- The following factors must be considered in determining sample size (the factors are considered in conjunction):

Factor to consider:	Change in relevant factor	Effect on sample size
Level of audit assurance to be obtained The more assurance the auditor intends to obtain from the planned procedures, the more items would have to be tested. The level of audit assurance is implied by the auditor’s assessment of control risk in the case of tests of control and the auditor’s accepted level of detection risk in the case of substantive procedures (remember, the accepted level of detection risk is influenced by the auditor’s assessed risks of material misstatement of the financial statements).	Increase	Increase
Accepted level of sampling risk. The complement of sampling risk is confidence level – the greater the degree of confidence required that the results of the sample is an actual indication of the population error, the larger the sample needs to be.	Increase	Decrease
Tolerable error The maximum error in a population that the auditor is willing to accept. In the case of tests of control it is expressed as a tolerable deviation rate, and in the case of substantive procedures it is related to the quantitative materiality level.	Increase	Decrease
Expected error The rate of deviation or the R-value misstatement that the auditor expects to find in the population. The auditor’s assessment of expected error is influenced by factors such as: knowledge of the system or items being audited, results of procedures in prior periods, results of other procedures relating to the current period, etc. In the case of internal control systems a	Increase	Increase

Factor to consider:	Change in relevant factor	Effect on sample size
high expected error rate will be consistent with a high assessment of control risk.		
Population size In theory there is a direct relationship between population size and sample size, but the actual effect is negligible. However, in the case small populations, audit sampling is often not an efficient means of selecting items for testing.	Increase	Negligible effect
Plus In the case of substantive testing: > The use of other substantive procedures directed at the same financial statement assertion > Audit significance of the account balance or class of transactions.	Increase Increase	Decrease Increase

- Once the sample size has been determined, the sample units must be selected. While sample size does not distinguish between statistical sampling and non-statistical sampling, sample selection method is a valid distinguishing criteria.

The following sample selection methods can be used:

Statistical selection methods	Non-statistical selection methods
Random number selection Each random number corresponds to the number of an item included in the defined population. Random numbers can be computer generated, or random number tables can be used.	Haphazard selection The auditor selects sample units from the population without following a structured technique and without considering any specific characteristics of the population items. The auditor must consciously avoid bias or predictability in an attempt to ensure that all items have a chance of selection.
Systematic selection ^{NOTE 1} The auditor calculates a sampling interval (population size / sample size) and selects a starting point. The starting point is selected <i>randomly</i> .	Systematic selection ^{NOTE 1} The auditor calculates a sampling interval (population size / sample size) and selects a starting point. The starting point is selected <i>haphazardly</i> .
Monetary unit selection / Value weighted selection A sample unit is defined as R1. This leads to a selection where audit effort is directed to the larger value items, because they have a greater change of selection. This approach is used in conjunction with a systematic selection method.	Monetary unit selection / Value weighted selection A sample unit is defined as R1. This leads to a selection where audit effort is directed to the larger value items, because they have a greater change of selection. This approach is used in conjunction with a systematic selection method.

Note 1: A possible disadvantage of systematic selection is that the sampling interval may correspond with a particular pattern in the population. This can be countered by using more than one starting point for the selection.

Note 2: Block selection (i.e. selecting a block of contiguous items from within the population) may be an appropriate method in some circumstances. However, block selection would rarely be an appropriate sample selection method when the auditor intends to draw valid inferences about the entire population based on the sample.



In those rare circumstances where it is considered appropriate, the auditor must ensure that a sufficient number of blocks are selected.

- The overriding requirement in the case of sampling is that the sample must be representative of the population. Therefore, the auditor must be satisfied that the selected sample have characteristics typical of the population, and that bias has been avoided as far as possible.
- After sample selection, the planned audit procedures are performed on each selected item. It does happen from time to time that the auditor is unable to perform the planned audit procedures on a selected item. In such situations the auditor must determine the nature of the surrounding circumstances and act accordingly:
 - The selected item is not appropriate for the application of the planned procedures (e.g. a document that requires examination has been cancelled). If the auditor is satisfied that the particular item in itself does not constitute an error, then a replacement item can be selected for testing.
 - Supporting documentation or records relating to the selected item is not available. The auditor considers performing suitable alternative procedures. If the auditor is satisfied that the documentation or records should be available and that suitable alternative procedures cannot be performed, the selected item is considered to be in error.

5 Important considerations in designing the sample testing procedure and evaluating the sample results

- The auditors first considerations, before designing the sample, are:
 - the specific objectives to be achieved;
 - the auditor's assessed risks of material misstatement of the financial statements related to the objectives to be achieved;
 - the combination of audit procedures that is likely to achieve the objectives concerned.
 - what will represent possible error conditions and the expectation for errors.
- The auditor must define the population. It is important to ensure that the population is:
 - appropriate in the context of the direction of testing (refer to the objectives of the tests to be performed);
 - complete, i.e. all the individual items making up the population is accounted for.
- The auditor is required to obtain audit evidence about the accuracy and completeness of information produced by the entity's information system when that information is

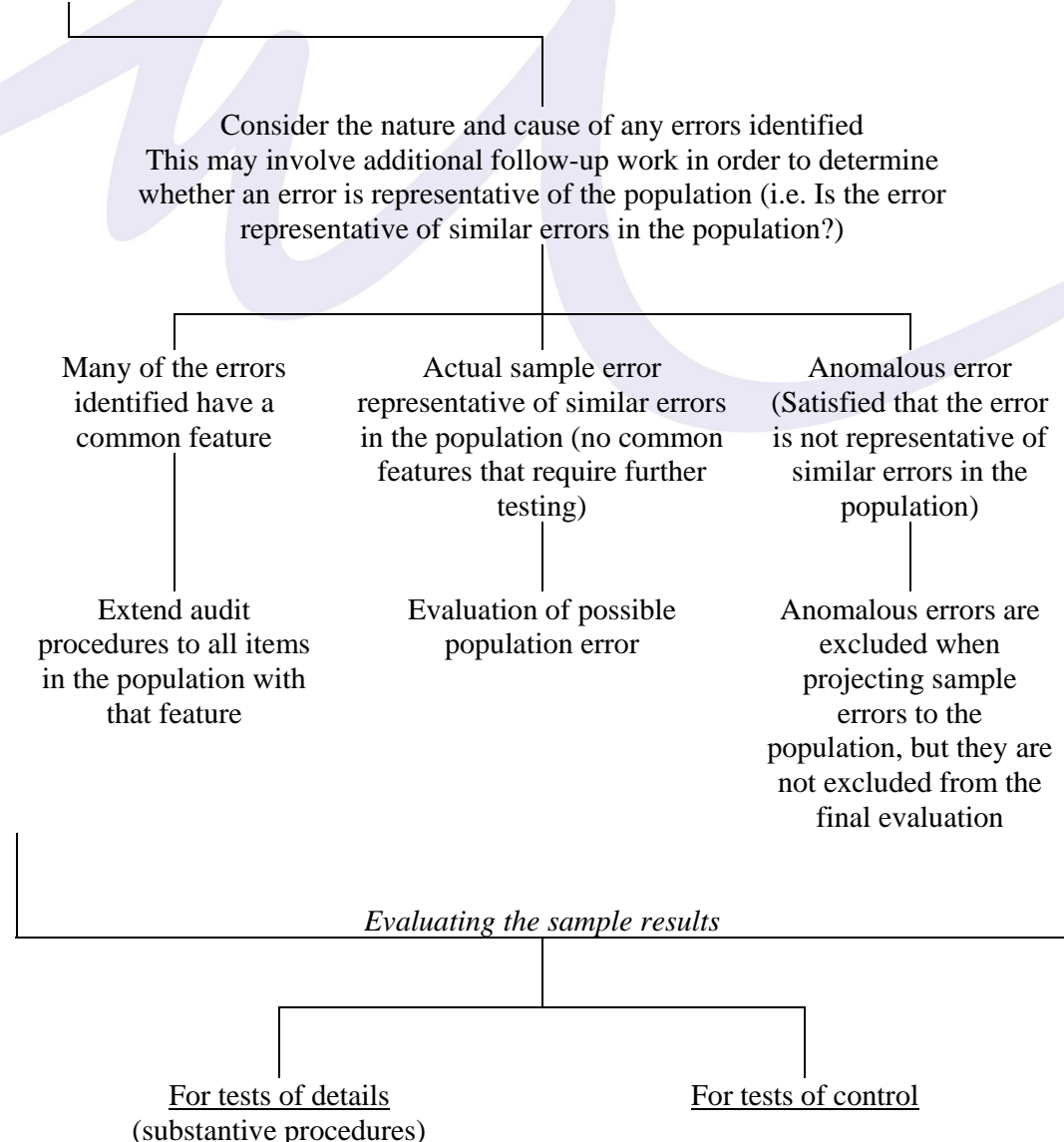
used in performing audit procedures. Therefore, when performing audit sampling, the auditor performs audit procedures to ensure that the information upon which the audit sampling is performed is sufficiently complete and accurate.

- Consider whether it would be more appropriate to stratify an identified population. The utilisation of smaller sub-populations/strata reduces the variability of items and, therefore, allows sample size to be reduced without an increase in sampling risk.



Strata must be defined in such a way that any sampling unit in the population can only belong to one stratum. Sample results for an individual stratum can only be projected to that stratum. In order to draw a conclusion on the entire population, the auditor must consider risk and materiality in relation to all the strata making up the population – this is a matter of professional judgement.

- When performing the planned audit procedures on the selected items, the auditor may identify errors. The following considerations and decisions are relevant to identified errors:



For tests of details
(substantive procedures)

For tests of control

<ul style="list-style-type: none"> • Project the sample error to the population (utilising probability theory in the case of statistical sampling, or a direct projection based on sample size in the case of non-statistical sampling) • Possible population error = projected errors + anomalous errors • In the case of stratification, the error for each stratum is projected separately, and then the projected errors and anomalous errors for the strata are combined. • Compare possible population error (PE) to the tolerable error (TE) 	<ul style="list-style-type: none"> • It is not necessary to do an explicit projection of the sample error rate (ISA 530, par.53). <ul style="list-style-type: none"> ▼ The sample error rate is deemed to also represent the possible population error rate. • Compare possible population error rate (PE) to the tolerable error rate (TE)
<ul style="list-style-type: none"> • If PE < TE The preliminary assessment of the relevant characteristic of the population does not need to be revised. • If PE < TE, but PE is close to TE Make final decision regarding acceptability of results, taking cognisance of the persuasiveness of the sample results in the context of other audit procedures and the results of additional procedures performed (if deemed appropriate in the circumstances) • If PE > TE It is necessary to revise the preliminary assessment of the relevant characteristic of the population. The auditor may: <ul style="list-style-type: none"> ▫ Request management to investigate the errors and possible errors and to make the necessary adjustments. 	
<ul style="list-style-type: none"> ▫ Modify the further audit procedures by extending the sample size. ▫ Modify the further audit procedures by performing alternative procedures. ▫ Request management to do an adjusting journal entry to bring the balance/or total within acceptable limits ▫ Consider the effect on the auditor's report of the possible material misstatement of the balance/total. ▫ Consider the effect, if any on other areas of the audit. 	<ul style="list-style-type: none"> ▫ Modify the planned audit procedures by extending the sample size (i.e. perform additional tests of control) ▫ Address the potential risks of misstatement by performing substantive procedures. ▫ Consider the direct effect, if any, of the errors on the financial statements. ▫ Consider the effect on the audit approach if there is significant management involvement (e.g. management override of controls) in the errors identified.

