

CHAPTER 7 :AUDIT SAMPLING

MEANING OF AUDIT SAMPLING

SA 530 :It refers to the application of audit procedures to less than 100% of items within a population of audit relevance such that all sampling units have a chance of selection in order to provide the auditor with a reasonable basis on which to draw conclusions about the entire population.

The objective of the auditor when using audit sampling is to provide a reasonable basis for the auditor to draw conclusions about the population from which the sample is selected.Sample must be representative

Population

Population refers to the entire set of data from which a sample is selected and about which the auditor wishes to draw conclusions.

Characteristics of Population

1. Appropriateness : The auditor will need to determine that the population from which the sample is drawn is appropriate for the specific audit objective.

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.

It is important for the auditor to ensure that the population is appropriate to the objective of the audit procedure, which will include consideration of the direction of testing.

2. Completeness : The population also needs to be complete, which means that 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 needs to include all relevant items from throughout the entire period.

3. Reliable : When performing the audit sampling, the auditor performs audit procedures to ensure that the information upon which the audit sampling is performed is sufficiently complete and accurate.

APPROACHES TO SAMPLING

Statistical sampling is an approach to sampling that has the random selection of the sample items; and the use of probability theory to evaluate sample results, including measurement of sampling risk characteristics. A sampling approach that does not have above characteristics is considered non-statistical sampling.

Audit testing done through this approach is more scientific than testing based entirely on the auditor's own judgment because it involves use of mathematical laws of probability in determining the appropriate sample size in varying circumstances. Statistical sampling has reasonably wide application where a population to be tested consists of a large number of similar items and more in the case of transactions involving compliance testing, trade receivables' confirmation, payroll checking, vouching of invoices and petty cash vouchers.

Non-Statistical Sampling

Under this approach, the sample size and its composition are determined on the basis of the personal experience and knowledge of the auditor. This approach has been in common application for many years because of its simplicity in operation. Traditionally, the auditor on the basis of his personal experience will determine the size of the sample and express it in terms that number of pages or personal accounts in the purchases or sales ledger to be checked. For example, March, June and September may be selected in year one and different months would be selected in the next year. An attempt would be made to avoid establishing a pattern of selection year after year to maintain an element of surprise as to what the auditor is going to check. It is a common practice to check large number of items towards the close of the year so that the adequacy of cut-off procedures can also be determined.

The non-statistical sampling is criticized on the grounds that it is neither objective nor scientific. The expected degree of objectivity cannot be assured in non-statistical sampling because the risk of personal bias in selection of sample items cannot be eliminated. The closeness of the qualities projected by the sample results with that of the whole population cannot be measured because the sample has not been selected in accordance with the mathematically based statistical techniques. However, it may be stated that the auditor with his experience and knowledge of the client's business can evaluate accurately enough the sample findings to make audit decision and the mathematical proof of accuracy in some cases may be a luxury which the auditor cannot afford.

The factors that should be considered for deciding upon the extent of checking on a sampling plan are following:

- (i) Size of the organisation under audit.
- (ii) State of the internal control.
- (iii) Adequacy and reliability of books and records.
- (iv) Tolerable error range.
- (v) Degree of the desired confidence.

The advantages of statistical sampling may be summarized as follows -

- (1) The amount of testing (sample size) does not increase in proportion to the increase in the size of the area (universe) tested.
- (2) The sample selection is more objective and thereby more defensible.
- (3) The method provides a means of estimating the minimum sample size associated with a specified risk and precision.
- (4) It provides a means for deriving a "calculated risk" and corresponding precision (sampling error) i.e. the probable difference in result due to the use of a sample in lieu of examining all the records in the group (universe), using the same audit procedures.
- (5) It may provide a better description of a large mass of data than a complete examination of all the data, since non-sampling errors such as processing and clerical mistakes are not as large.

Stratification and Value-Weighted Selection

In considering the characteristics of the population from which the sample will be drawn, the auditor may determine that stratification or value-weighted selection technique is appropriate. SA 530 provides guidance to the auditor on the use of stratification and value-weighted sampling techniques.

Stratification: 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 increasing sampling risk. When performing tests of details, the population is often stratified by monetary value.

This allows greater audit effort to be directed to the larger value items, as these items may contain the greatest potential misstatement in terms of overstatement. Similarly, a population may be stratified according to a particular characteristic that indicates a higher risk of misstatement, for example, when testing the allowance for doubtful accounts in the valuation of accounts receivable, balances may be stratified by age.

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, the auditor will need to consider the risk of material misstatement in relation to whatever other strata make up the entire population.

If a class of transactions or account balance has been divided into strata, the misstatement is projected for each stratum separately. Projected misstatements for each stratum are then combined when considering the possible effect of misstatements on the total class of transactions or account balance.

Value-Weighted Selection: When performing tests of details it may be efficient to identify the sampling unit as the individual monetary units that make up the population. Having selected specific monetary units from within the population, for example, the accounts receivable balance, the auditor may then examine the particular items, for example, individual balances, that contain those monetary units. One benefit of this approach to defining the sampling unit is 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 may be used in conjunction with the systematic method of sample selection and is most efficient when selecting items using random selection.

Sample Size

The level of sampling risk that the auditor is willing to accept affects the sample size required. The lower the risk the auditor is willing to accept, the greater the sample size will need to be.

The sample size can be determined by the application of a statistically-based formula or through the exercise of professional judgment. There are various factors typically have on the determination of sample size. When circumstances are similar, the effect on sample size of factors will be similar regardless of whether a statistical or nonstatistical approach is used.

Examples of Factors Influencing Sample Size for Tests of Controls

- When there is an increase in the extent to which the auditor's risk assessment takes into account relevant 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, the auditor is required to perform tests of controls. Other things being equal, the greater the reliance the auditor places 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). Thus, sample size will increase.

- If there is an increase in the tolerable rate of deviation. Then sample size will decrease, as lower the tolerable rate of deviation, larger the sample size needs to be.
- When there is an increase in the expected rate of deviation of the population to be tested then sample size will increase, as higher the expected rate of deviation, larger the sample size needs to be so that the auditor is in a position to make a reasonable estimate of the actual rate of deviation. Factors relevant to the auditor's consideration of the expected rate of deviation 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 control deviation rates ordinarily warrant little, if any, reduction of the assessed risk of material misstatement.

- An increase in the auditor's desired level of assurance that the tolerable rate of deviation is not exceeded by the actual rate of deviation in the population will increase the sample size. Thus, the greater the level of assurance that the auditor desires that the results of the sample are in fact indicative of the actual incidence of deviation in the population, the larger the sample size needs to be.

- In case of large populations, the actual size of the population has little, if any, effect on sample size. For small populations however, audit sampling may not be as efficient as alternative means of obtaining sufficient appropriate audit evidence. Therefore, there will be negligible effect on sample size due to increase in the number of sampling units in the population.

Examples of Factors Influencing Sample Size for Tests of Details

- 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. Thus we can say that there will be an increase in sample size in case of an increase in the auditor's assessment of the risk of material misstatement.

- 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 population, the less assurance the auditor will require from sampling and, therefore, the smaller the sample size can be. Hence, if there is an increase in the use of other substantive procedures directed at the same assertion, the size of sample will decrease.

- An increase in the auditor's desired level of assurance that tolerable misstatement is not exceeded by actual misstatement in the population will increase the sample size. Hence, greater the level of assurance that the auditor requires that the results of the sample are in fact indicative of the actual amount of misstatement in the population, the larger the sample size needs to be.
- An increase in tolerable misstatement will decrease the sample size as lower the tolerable misstatement, the larger the sample size needs to be.

- The greater the amount of misstatement 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 misstatement in the population. Factors relevant to the auditor's consideration of the expected misstatement 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. So sample size will increase in case of an increase in the amount of misstatement the auditor expects to find in the population.

- When stratification of the population is appropriate then sample size will decrease as when there is a wide range (variability) in the monetary size of items in the population, it may be useful to stratify the population. 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.