

# Audit Sampling: An Overview and Application to Tests of Controls and Substantive Tests of Account Balances

## Learning Objectives

*Upon completion of this chapter, you will be able to*

- 1** Define audit sampling.
- 2** Determine the types of audit procedures that do not involve sampling.
- 3** Review basic sampling terminology.
- 4** Compare nonstatistical to statistical sampling.
- 5** Apply attribute sampling to tests of controls.
- 6** Apply statistical sampling for tests of controls.
- 7** Apply variables sampling for substantive tests of balances.
- 8** Apply statistical sampling for substantive tests of account balances.

## HOW DOES THE AUDITOR KNOW WHAT TO EXAMINE?

**EarthWear**, EarthWear is a multimillion dollar company. In the course of a year it undertakes tens or even hundreds of thousands of transactions, such as sales and purchases; its asset and liability accounts are made of hundreds or thousands of individual items and amounts. Although EarthWear uses a sophisticated IT system to handle its transactions and Willis & Adams can use their own sophisticated audit technology in conjunction with that IT system in the audit examination, the sheer volume of EarthWear's activity makes it impossible to examine everything.

When the engagement team from Willis & Adams performs the audit of EarthWear, one of the most important aspects of the examination is to determine *what* to examine. The only practical way for Willis & Adams to carry out the examination is to use *sampling*. They will use audit sampling in their tests of controls to examine EarthWear's system of internal control. For example, they may test internal control over a sample of transactions in EarthWear's revenue process by

selecting a sample of recorded sales transactions from throughout the year and tracing them through the accounting and recording system to ensure that the relevant management assertions such as occurrence, completeness, accuracy, and so on are valid. They will use audit sampling for substantive tests of balances in EarthWear's financial statements. For example, they may send confirmation requests to a sample of customers shown in EarthWear's records as having outstanding accounts receivable at December 31, 2006 to test the validity of the relevant management assertions such as existence, rights and obligations, valuation and allocation, and so on.

This chapter provides an overview of audit testing, discussing audit sampling in tests of controls and substantive tests of balances. The coverage is at a fundamental level and the concepts are equally applicable to non-statistical and statistical sampling. Detailed examples of statistical sampling techniques are presented on the accompanying text website at [www.mcgrawhill.ca/olc/messier](http://www.mcgrawhill.ca/olc/messier).

three questions arise if the auditor is going to examine a subset of the entity's records and transactions:

1. How many items should be examined?
2. Which specific items should be examined?
3. What conclusion can the auditor draw about the population, based on the result of the sample?

Audit sampling can be defined as the application of an audit procedure to less than 100 percent of the items within an account balance or class of transactions for the purpose of evaluating some characteristic of the balance or class.

Audit evidence choices that do not involve audit sampling

Enquiry and observation

- to understand the components of internal audit
- to evaluate risk factors
- to establish the existence of inventory

Analysis

- simple comparison of last years' balance sheet with current one
- comparison of ratios across periods

Procedures applied to every item in the population

- for account receivables amounts greater than a specified dollar amount

Classes of transactions or account balances not tested

- a class of transactions or an account balance does not need to be examined

## **Table 7-2 Steps in an Attribute-Sampling Application**

### **Planning**

1. Determine the objective(s) of the tests of controls.
2. Define the deviation from the control policy or procedure.
3. Define the population.
4. Define the sampling unit.
5. Determine the sample size.
  - a. Determine the acceptable risk of assessing control risk too low.
  - b. Determine the tolerable error or deviation rate.
  - c. Determine the expected population deviation rate.
  - d. Consider the effect of population size.
6. Randomly select the sample items.

### **Performance**

7. Perform the audit procedures.

### **Evaluation**

8. Calculate the sample results.
9. Perform error analysis.
10. Draw final conclusions.

### Step 1 Determine the objective of the tests of controls

- to evaluate the operating effectiveness of the internal control
  - for example, in most revenue cycles, goods are billed after they are shipped. No sales transaction should be recorded unless a properly authorized shipping document is present prior to recording in the sales journal.

### Step 2 define the deviation from the control policy

- a deviation is the departure from adequate performance of the internal control  
define carefully what is considered a deviation. For example, suppose the client has implemented a specified policy for granting credit to customers that is performed in the following manner. For *new* customers, the client has the credit department conduct a background credit check. Based on this credit check, the customer is either granted a line of credit or denied credit. For *existing* customers, when a new order is received, the amount of the current sales transaction is added to the customer's account receivable balance and compared to the customer's approved line of credit. If the total is less than the line of credit, the sale is made. If the total exceeds the credit limit, the sale is subjected to management review before it is completed. For this control policy, the auditor would have to define a deviation in terms of how the policy is applied to a new customer versus an existing customer. For a new customer, a deviation would involve the credit department's failing to complete a credit check properly or granting credit to an unworthy customer. For an existing customer, a deviation would involve a sale that exceeds the customer's credit limit at the time of sale without additional approval by management.

### Step 3 define the population

- determine that the population is appropriate
- determine that the physical representation of the population is appropriate
- determine the period to be covered by the test

#### Step 4 define the sampling unit

- a sampling unit may be a document of entry

#### Step 5 determine the sample size

- the larger the sample the more conform to the population it is

#### Step 6 select the sample items

- all items regardless of dollar value, must have equal opportunity to be selected
  - random number selection
    - using a random-number table
  - systematic selection
    - a sampling interval by dividing the physical population by the sample size
  - haphazard selection
    - sampling units are selected without any conscious bias, without a special reason for including or omitting items from the sample

#### Step 7 perform the audit procedures

- **Voided documents.** The auditor may occasionally select a voided document in a sample. If the transaction has been properly voided, it does not represent a deviation. The item should be replaced with a new sample item.
- **Unused or inapplicable documents.** Sometimes a selected item is not appropriate for the definition of the control. For example, the auditor may define a deviation for a purchase transaction as a vendor's bill not supported by a receiving report. If the auditor selects a telephone or utility bill, there will not be a receiving report to examine. In such a case, the absence of the receiving report would not be a deviation. The auditor would simply replace the item with another purchase transaction.
- **Missing documents.** For most tests of controls, the auditor examines documents for evidence of the performance of the control. If the auditor is unable to examine a document or to use an alternative procedure to test whether the control was adequately performed, the sample item is a deviation for purposes of evaluating the sample results.
- **Stopping the test before completion.** If a large number of deviations are detected early in the tests of controls, the auditor should consider stopping the test, as the results of the test will not support the planned assessed level of control risk. In such a case, the auditor may rely on other internal controls or set control risk at the maximum for the audit objective affected, and revise the related substantive tests.

**7-39** You are responsible for the audit of the accounts receivable of XLT, Inc., a company that supplies office equipment and supplies (such as printer ink cartridges), to a wide variety of customers, both resellers and commercial end users. Following is information about the accounts receivable:

<b>Accounts receivable balance per client</b>	\$3,857,000
<b>Number of individual accounts</b>	8,125

You have selected a judgemental sample of all accounts over \$15,000 (26 accounts worth a total of \$535,000) and 84 accounts under \$15,000 (worth \$93,500) for a total of 110 accounts to be confirmed. Inherent risk is assessed as high. Control risk is assessed as moderate. Materiality has been set at \$120,000. No other substantive procedures have been performed.

Fortunately, all confirmation requests were answered. Following are the results of the confirmation process:

<i>Account</i>	<i>Client Value</i>	<i>Audit Value</i>
Accounts over \$15,000	\$515,000	\$488,000
Accounts under \$15,000	93,500	89,750
<b><i>Detail of Accounts Under \$15,000:</i></b>		
Able Ltd.	6,200	6,000
Baker, Inc.	4,680	4,430
Delta, Inc.	2,475	1,475
Evan Ltd.	1,670	0
Raston, Inc.	5,980	5,890
Garry Ltd.	1,495	1,385
Witten Ltd.	4,550	4,400
Cortan, Inc.	1,170	990
	\$28,230	\$24,570

**Required:**

Evaluate the results of this judgemental sample. Your evaluation should address conceptual issues related to using sampling, and the specific results of this sample.

(CICA, adapted)

**7-40** You have just completed the inventory observation of Able Pipefitters, a company that manufactures pipe fittings such as elbow bends and S-bends for pipes, primarily for plumbing applications. These fittings come in a large variety of combinations of shapes and diameters, totalling 1,595 unique types. The total value of the inventory, per the client's records, was \$577,000. A random (nonstatistical) sample of 75 was selected for physical observation and price tests. The tolerable misstatement for the account is set

at \$15,000. The client's value for the 75 items was \$85,000. You identified the following misstatements in the sample of 75 items:

<i>Part #</i>	<i>Book Value</i>	<i>Audited Value</i>
54E22	\$685.00	\$648.50
63S78	22.50	21.30
77S09	153.90	149.25
32U67	449.00	425.00
12E84	34.60	33.20
83S08	376.60	357.60
56E74	287.50	282.50
44S26	129.00	109.00

**Required:**

Calculate the projected likely misstatement using the pro rata projection method discussed in the text for projecting identified misstatements to the population.