

Audit Sampling for Tests of Details of Balances

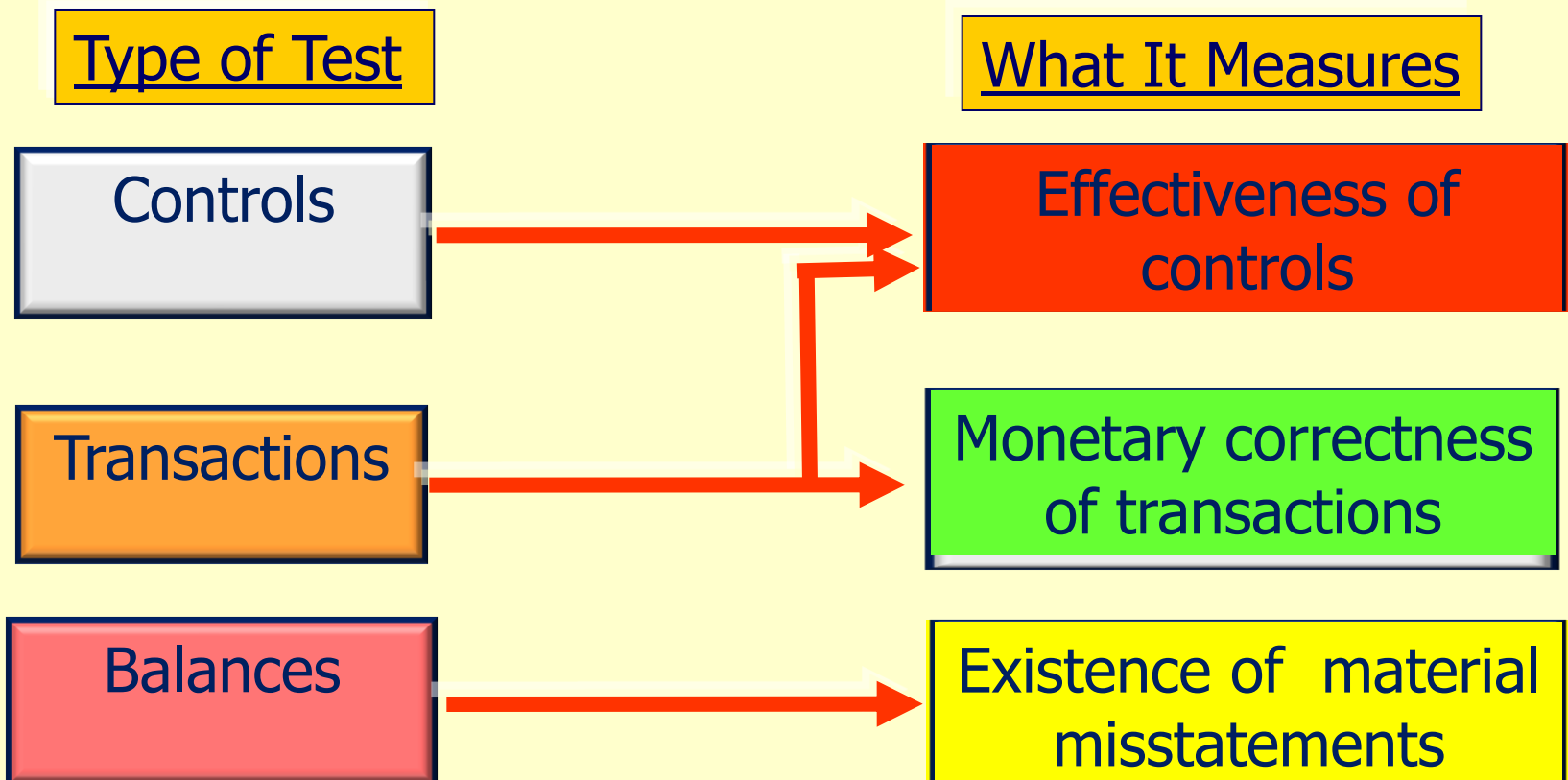
Chapter 17

Learning Objective 1

Differentiate audit sampling for tests of details of balances and for tests of controls and substantive tests of transactions.

Tests of Details of Balances and Controls, and Substantive Tests of Transactions

Differences among tests



Learning Objective 2

Apply nonstatistical sampling to tests of details of balances.

Nonstatistical Sampling

14 steps required in audit sampling for tests of details of balances.

Steps parallel the sampling approach used to test controls and/or test transactions.

There are a few ***differences*** because of the different objectives of the tests.

Comparison of the 14 Steps

Audit sampling for tests of details of balances

1. State the objectives of the audit test.
2. Decide whether audit sampling applies.
3. ***Define a misstatement.***
4. Define the population.
5. Define the sampling unit.

Audit sampling for tests of controls and substantive tests of transactions

1. State the objectives of the audit test.
2. Decide whether audit sampling applies.
3. Define attributes and exception conditions.
4. Define the population.
5. Define the sampling unit.

Comparison of the 14 Steps

Audit sampling for tests of details of balances

6. ***Specify tolerable misstatement.***
7. ***Specify acceptable risk of incorrect acceptance.***
8. ***Estimate misstatements in the population.***
9. Determine the initial sample size.

Audit sampling for tests of controls and substantive tests of transactions

6. Specify the tolerable exception rate.
7. Specify acceptable risk of assessing control risk too low.
8. Estimate the population exception rate.
9. Determine the initial sample size.

Comparison of the 14 Steps

Audit sampling for tests of details of balances

10. Select the sample.
11. Perform the audit procedures.
12. Generalize from the sample to the population.
13. ***Analyze the misstatements.***
14. Decide the acceptability of the population.

Audit sampling for tests of controls and substantive tests of transactions

10. Select the sample.
11. Perform the audit procedures.
12. Generalize from the sample to the population.
13. Analyze the exceptions.
14. Decide the acceptability of the population.

Action When a Population Is Rejected

- Take no action until tests of other audit areas are completed
- Perform expanded audit tests in specific areas
- Increase the sample size
- Adjust the account balance
- Request the client to correct the population
- Refuse to give an unqualified opinion

Learning Objective 3

Apply monetary unit sampling.

Monetary Unit Sampling

MUS is an innovation in statistical sampling methodology that was developed specifically for use by auditors.

Differences between MUS and Nonstatistical Sampling

- The definition of the sampling unit is an individual dollar.
- The population size is the recorded dollar population.
- Preliminary judgment of materiality is used for each account instead of tolerable misstatement.

Differences between MUS and Nonstatistical Sampling

- Sample size is determined using a statistical formula.
- A formal decision rule is used for deciding the acceptability of the population.
- Sample selection is done using probability proportional to size sample selection (PPS).

Differences between MUS and Nonstatistical Sampling

The auditor generalizes from the sample to the population using MUS techniques.

- Attribute sampling tables are used to calculate results
- Attribute results must be converted to dollars
- Make an assumption about the % of misstatement for each item misstated
- Determine misstatement bounds.

Generalizing from the Sample to the Population

Assumption 1:

Population is \$1,200,000

Sample size is 100 customer accounts

Overstatement amounts equal 100%.

Understatement amounts equal 100%.

Misstatement bounds at a 5% ARIA are:

Upper misstatement bound

$$= \$1,200,000 \times 3\% \times 100\% = \$36,000$$

Lower misstatement bound

$$= \$1,200,000 \times 3\% \times 100\% = \$36,000$$

Generalizing from the Sample to the Population

The following two conditions both have to exist before the \$36,000 correctly reflects the true overstatement amount:

1. All amounts have to be overstatements.
2. All population items misstated have to be 100% misstated.

Generalizing from the Sample to the Population

Assumption 2:

Overstatement amounts equal 10%.
Understatement amounts equal 10%.
Misstatement bounds at a 5% ARIA are:

Upper misstatement bound
 $= \$1,200,000 \times 3\% \times 10\% = \$3,600$

Lower misstatement bound
 $= \$1,200,000 \times 3\% \times 10\% = \$3,600$

Generalizing from the Sample to the Population

Assumption 3:

Overstatement amounts equal 20%.
Understatement amounts equal 200%.
Misstatement bounds at a 5% ARIA are:

Upper misstatement bound
 $= \$1,200,000 \times 3\% \times 20\% = \$7,200$

Lower misstatement bound
 $= \$1,200,000 \times 3\% \times 200\% = \$72,000$

Appropriate Percent of Misstatement Assumption

The appropriate assumption for the overall percent of misstatement in those population items containing a misstatement is an auditor's decision.

Generalizing When Misstatements Are Found

1. Overstatement and understatement amounts are dealt with separately and then combined.
2. A different misstatement assumption is made for each misstatement, including the zero misstatements.

Generalizing When Misstatements Are Found

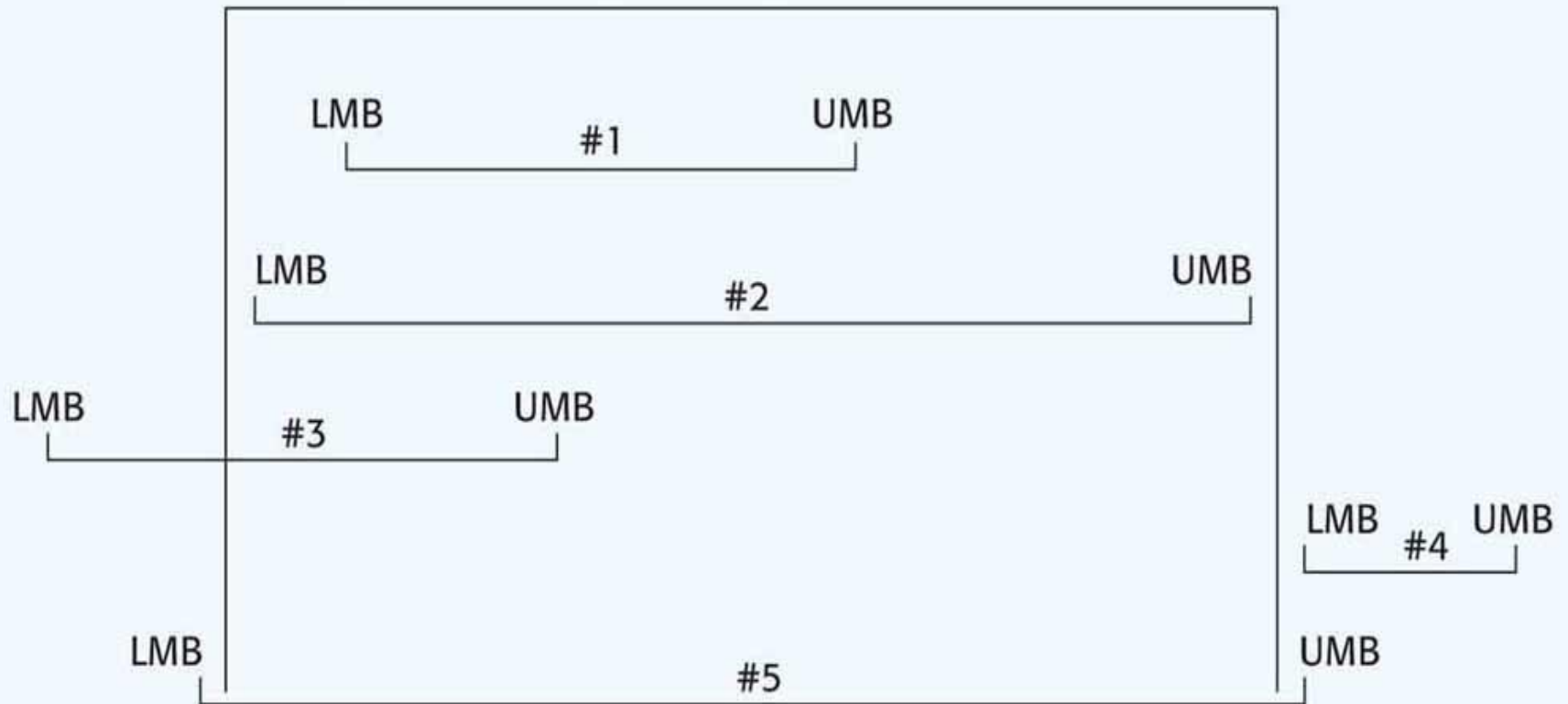
3. The auditor must deal with layers of the computed upper exception rate (CUER) from the attributes sampling table.
4. Misstatement assumptions must be associated with each layer.

Illustration of the Auditor's Decision Rule for MUS

– Tolerable Misstatement

\$0 Misstatements

+ Tolerable Misstatement



Copyright ©2012 Pearson Education, publishing as Prentice Hall

Determining Sample Size Using MUS

- Materiality
- Assumption of the average percent of misstatement for population items that contain a misstatement
- Acceptable risk of incorrect acceptance
- Recorded population value

Determining Sample Size Using MUS

- Estimate of the population exception rate
- Relationship of the audit risk model to sample size for MUS

$$**PDR = AAR \div (IR \times CR)**$$

Advantages of Using MUS

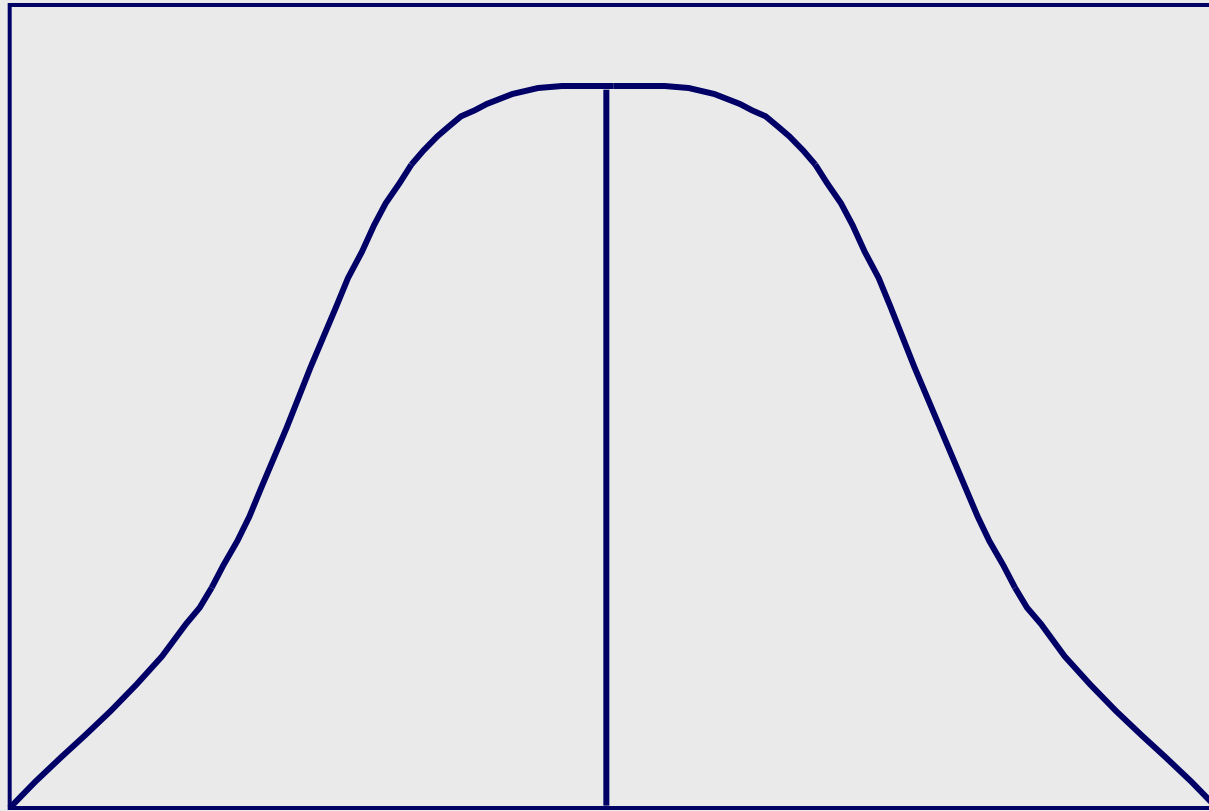
- MUS increases the likelihood of selecting high-dollar items
- MUS often reduces the cost of audit testing
- Easy to apply
- MUS provides a statistical conclusion

Learning Objective 4

Describe variables sampling.

Frequency Distribution of Sample Means

Frequency of values in percent



Value of x in dollars

Sampling Distributions

Three things shape the results of the experiment of taking a large number of samples from a known population:

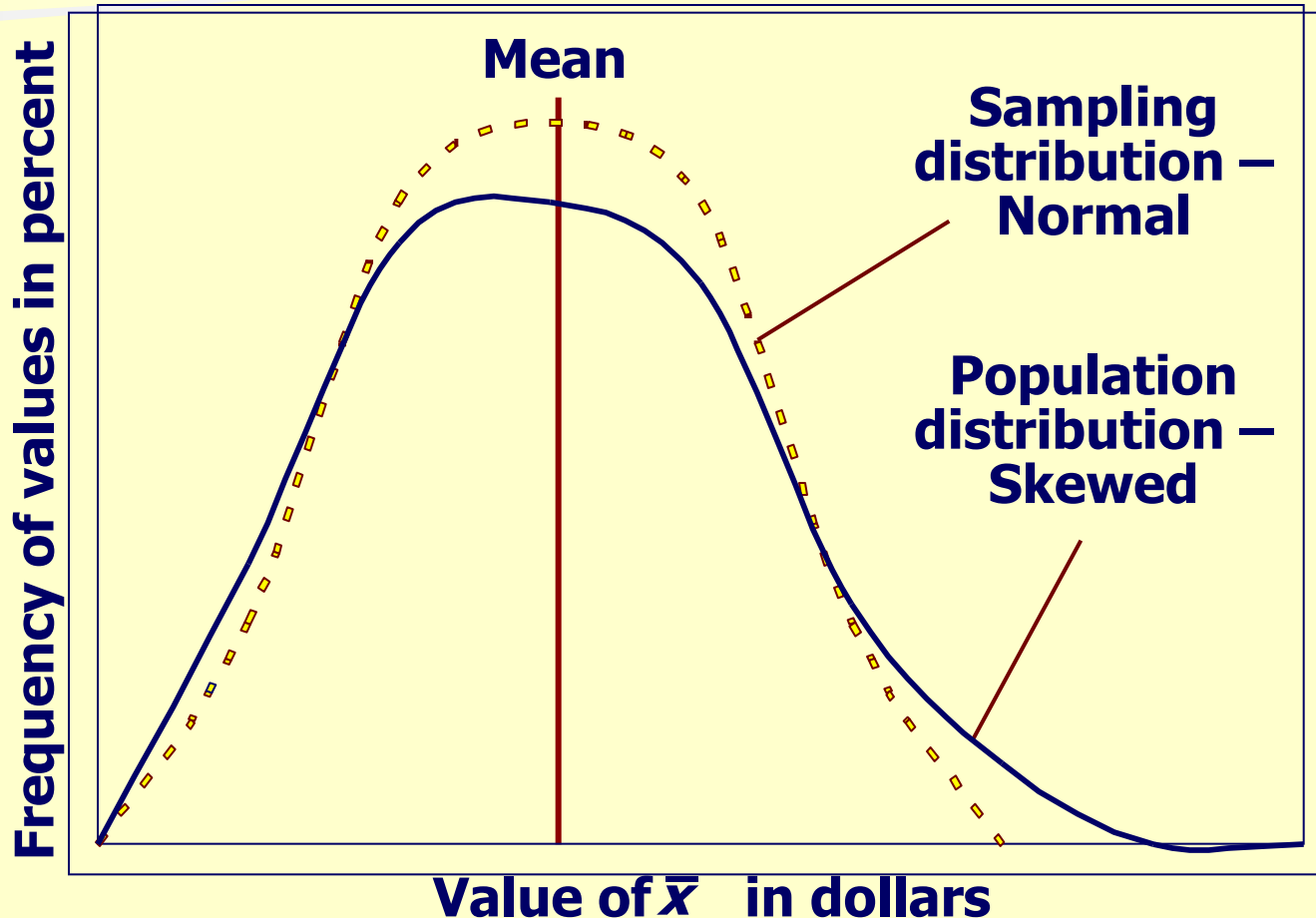
1. The mean value of all the sample means is equal to the population mean (\bar{x}).

Sampling Distributions

2. The shape of the frequency distribution of the sample means is that of a normal distribution (curve), as long as the sample size is sufficiently large, ***regardless of the distribution of the population.***

3. The percentage of sample means between any two values of the sampling distribution is measurable.

Sampling Distribution for a Population Distribution



Variables Methods

- Difference estimation
- Ratio estimation
- Mean-per-unit estimation

Stratified Statistical Methods

- All of the elements of the population are divided into two or more subpopulations
- Each subpopulation is independently tested
- The calculations are then made for each stratum and then combined into one overall population estimate

Sampling Risks (ARIA and ARIR)

	Actual state of the population	
Actual audit decision	Materially misstated	Not materially misstated
Conclude that the population is materially misstated	Correct conclusion – no risk	Incorrect conclusion – risk is ARIR
Conclude that the population is not materially misstated	Incorrect conclusion – risk is ARIA	Correct conclusion – no risk

Learning Objective 5

Use difference estimation in tests of details of balances.

Plan the Sample and Calculate the Sample Size

- State the objectives of the audit test
- Decide whether audit sampling applies
- Define misstatement conditions
- Define the population
- Define the sampling unit
- Specify tolerable misstatement

Specify Acceptable Risk

ARIA

ARIR

Estimate Misstatement in the Population

1. Estimate an expected point estimate
2. Make an advance population standard deviation estimate – variability of the population.

Calculate the Initial Sample Size

$$n = \frac{SD^*(Z_A + Z_R)N}{(TM - E^*)^2}$$

where:

n = initial sample size

SD^* = advance estimate of the standard deviation

Z_A = confidence coefficient for ARIA

Z_R = confidence coefficient for ARIR

N = population size

TM = tolerable misstatement for the population (materially)

E^* = estimated point estimate of the population misstatement

Select the Sample and Perform the Procedures

The auditor must use one of the probabilistic sample selection methods to select the items for confirmation.

The auditor must use care in confirming and performing alternative procedures.

Evaluate the Results

Generalize from the sample to the population

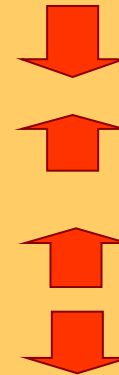
1. Compute the point estimate of the total misstatement
2. Compute an estimate of the population standard deviation
3. Compute the precision interval
4. Compute the confidence limits

Effect of Changing Each Factor

Type of change

Effect on the computed precision interval

Increase ARIA
Increase the point estimate of the misstatements
Increase the standard dev.
Increase the sample size

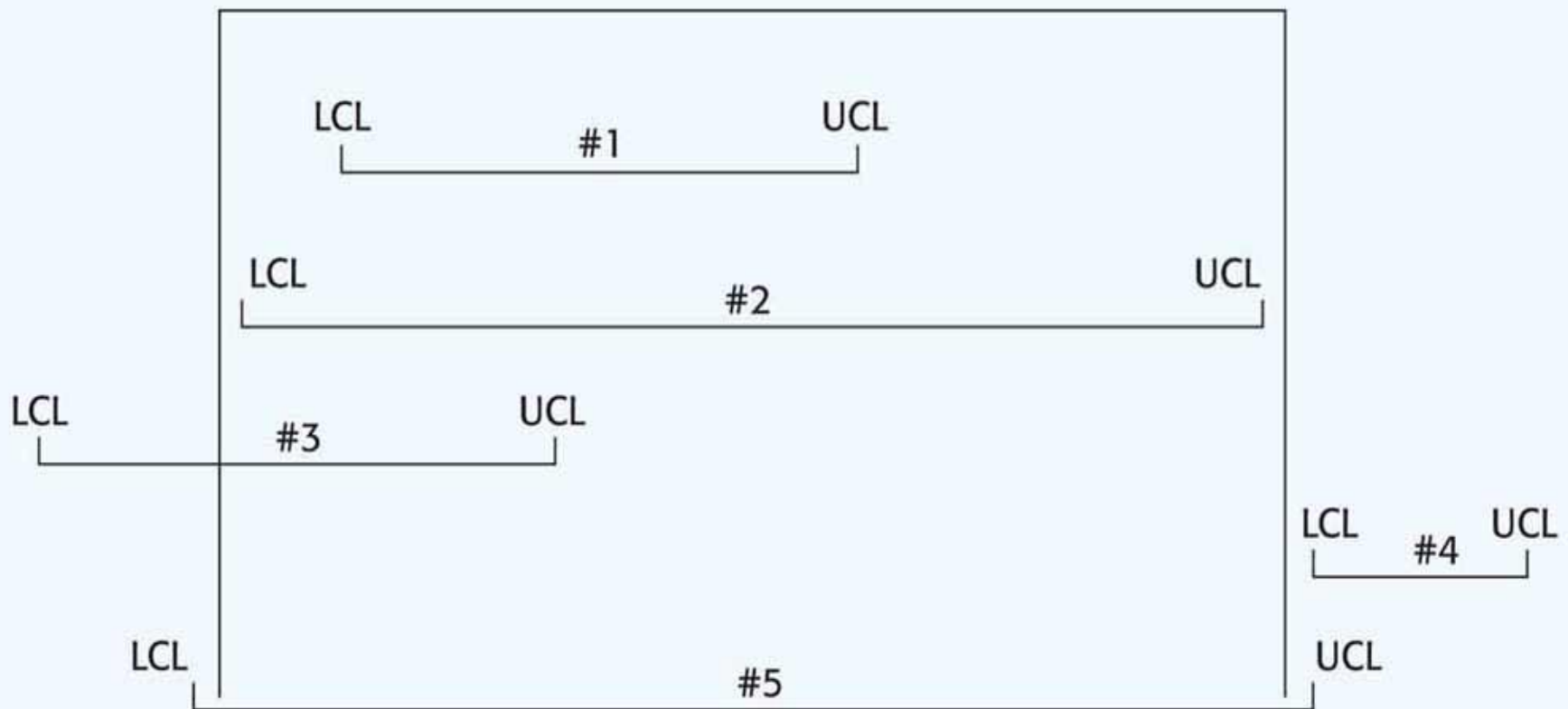


Analyze the Misstatements

The auditor must evaluate misstatements to determine the cause of each misstatement and decide whether modification of the audit risk model is needed.

Auditor's Decision Rule for Difference Estimation

– Tolerable misstatement \$0 Misstatements + Tolerable misstatement



Copyright ©2012 Pearson Education, publishing as Prentice Hall

End of Chapter 17