South Valley University
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Advanced Studies in Auditing

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Contents

Chapter (1)

AUDIT PLANNING AND ANALYTICAL PROCEDURES

Enron's complex and confusing business structure helped disguise material misstatements in Enron's financial statements for several years. Gaining an understanding of the client's business and industry is one of the most important steps in audit planning. This chapter explains audit planning in detail, including gaining an understanding of the client's business and industry, assessing client business risk, and performing preliminary analytical procedures**.**

PLANNING

Principles underlying AICPA auditing standards indicate:

The* auditor *must plan the work and properly supervise any assistants.

There are three main reasons why the auditor should properly plan engagements: to enable the auditor to obtain sufficient appropriate evidence for the circumstances, to help keep audit costs reasonable, and to avoid misunderstandings with the client. Obtaining sufficient appropriate evidence is essential if the CPA firm is to minimize legal liability and maintain a good reputation in the business community. Keeping costs reasonable helps the firm remain competitive. Avoiding misunderstandings with the client is necessary for good client relations and for facilitating high-quality work at

reasonable cost. Suppose that the auditor informs the client that the audit will be completed before June 30 but is unable to finish it until August because of inadequate scheduling of staff. The client is likely to be upset with the CPA firm and may even sue for breach of contract.

FIGURE 1 **Planning an Audit and Designing an Audit Approach**

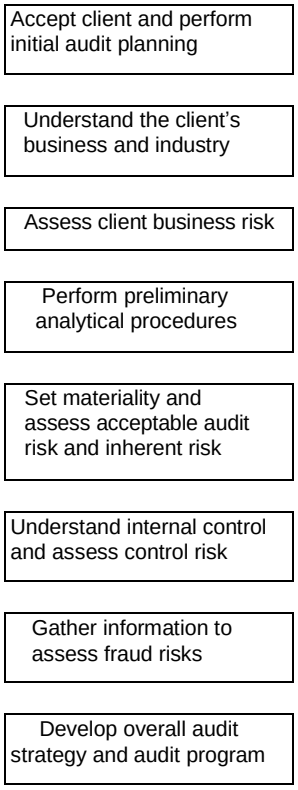


Figure 1 presents the eight major parts of audit planning. Each of the first seven parts is intended to help the auditor develop the last part, an effective and efficient overall audit plan and audit program. Before beginning our discussion, we

briefly introduce two risk terms: acceptable audit risk and inherent risk. These two risks significantly influence the conduct and cost of audits. Much of the early planning of audits deals with obtaining information to help auditors assess these risks.

Acceptable audit risk is a measure of how willing the auditor is to accept that the financial statements may be materially misstated after the audit is completed and an unqualified opinion has been issued. When the auditor decides on a lower acceptable audit risk, it means that the auditor wants to be more certain that the financial statements are not materially misstated. Zero risk is certainty, and a 100 percent risk is complete uncertainty.

Inherent risk is a measure of the auditor's assessment of the likelihood that there are material misstatements in an account balance before considering the effectiveness of internal control. If, for example, the auditor concludes that there is a high likelihood of material misstatement in accounts receivable due to changing economic conditions, the auditor concludes that inherent risk for accounts receivable is high.

Assessing acceptable audit risk and inherent risk is an important part of audit planning because it helps determine the amount of evidence that will need to be accumulated and

the experience level of staff assigned to the engagement. For example, if inherent risk for inventory is high because of complex valuation issues, more evidence will be accumulated in the audit of inventory and more experienced staff will be assigned to perform testing in this area.

ACCEPT CLIENT AND PERFORM INITIAL AUDIT PLANNING

Initial audit planning involves four things, all of which should be done early in the audit:

1. The auditor decides whether to accept a new client or continue serving an existing one. This determination is typically made by an experienced auditor who is in a position to make important decisions. The auditor wants to make this decision early, before incurring any significant costs that cannot be recovered.
2. The auditor identifies why the client wants or needs an audit. This information is likely to affect the remaining parts of the planning process.
3. To avoid misunderstandings, the auditor obtains an understanding with the client about the terms of the engagement.

4. The auditor develops an overall strategy for the audit, including engagement staffing and any required audit specialists.

Client Acceptance and Continuance

Even though obtaining and retaining clients is not easy in a competitive profession such as public accounting, a CPA firm must use care in deciding which clients are accept able. The firm's legal and professional responsibilities are such that clients who lack integrity or argue constantly about the proper conduct of the audit and fees can cause more problems than they are worth. Some CPA firms now refuse any clients in certain high-risk industries, such as software technology companies or health and casualty insurance companies, and may even discontinue auditing existing clients in those industries. Some smaller CPA firms will not do audits of publicly held clients because of the risk of litigation or because of costs associated with registering the audit firm with the PCAOB. An auditor is unlikely to accept a new client or continue serving an existing client if the risk associated with the client is greater than the risk the firm is willing to accept.

New Client Investigation Before accepting a new client, most CPA firms investigate the company to determine its

acceptability. They do this by examining, to the extent possible, the prospective client's standing in the business community, financial stability, and relations with its previous CPA firm. For example, many CPA firms use considerable caution in accepting new clients in newly formed, rapidly growing businesses. Many of these businesses fail financially and expose the CPA firm to significant potential liability. The CPA firm must also determine that it has the competency, such as industry knowledge, to accept the engagement and that the firm can satisfy all independence requirements.

For prospective clients that have previously been audited by another CPA firm, the new (successor) auditor is required by auditing standards to communicate with the predecessor auditor. The purpose of the requirement is to help the successor auditor evaluate whether to accept the engagement. The communication may, for example, inform the successor auditor that the client lacks integrity or that there have been disputes over accounting principles, audit procedures, or fees.

The burden of initiating the communication rests with the successor auditor, but the predecessor auditor is required to respond to the request for information. However, the

confidentiality requirement in the Code of Professional Conduct requires that the predecessor auditor obtain permission from the client before the communication can be made. In the event of unusual circumstances such as legal problems or disputes between the client and the predecessor, the predecessor's response can be limited to stating that no information will be provided. If a client will not permit the communication or the predecessor will not provide a comprehensive response, the successor should seriously consider the desirability of accepting a prospective engagement, without considerable other investigation.

Even when a prospective client has been audited by another CPA firm, a successor may make other investigations by gathering information from local attorneys, other CPAs, banks, and other businesses. In some cases, the auditor may even hire a professional investigator to obtain information about the reputation and background of key members of management. Such extensive investigation is appropriate when there has been no previous auditor, when a predecessor auditor will not provide the desired information, or if any indication of problems arises from the communication.

AICPA auditing standards also require that the auditor determine whether the financial reporting framework to be

used by management to prepare the financial statements is appropriate. Without an appropriate financial reporting framework, the auditor does not have suitable criteria for auditing the financial statements. In making that determination, the auditor considers the nature of the entity, the purpose and nature of the financial statements, and whether laws or regulations prescribe a particular framework. Common financial reporting frameworks include U.S. generally accepted accounting principles and international financial reporting standards (IFRS).

Continuing Clients Many CPA firms evaluate existing clients annually to determine whether there are reasons for not continuing to do the audit. Previous conflicts over the appropriate scope of the audit, the type of opinion to issue, unpaid fees, or other matters may cause the auditor to discontinue association. The auditor may also drop a client after determining the client lacks integrity.

Even if none of the previously discussed conditions exist, the CPA firm may decide not to continue doing audits for a client because of excessive risk. For example, a CPA firm might decide that considerable risk of a regulatory conflict exists between a governmental agency and a client, which could result in financial failure of the client and ultimately

lawsuits against the CPA firm. Even if the engagement is profitable, the long-term risk may exceed the short-term benefits of doing the audit. Investigating new clients and reevaluating existing ones is an essential part of deciding acceptable audit risk. For example, assume a potential client operates in a reasonably risky industry, that its management has a reputation of integrity, but is also known to take aggressive financial risks. If the CPA firm decides that acceptable audit risk is extremely low, it may choose not to accept the engagement. If the CPA firm concludes that acceptable audit risk is low but the client is still acceptable, the firm may accept the engagement but increase the fee proposed to the client. Audits with a low acceptable audit risk will normally result in higher audit costs, which should be reflected in higher audit fees.

Identify Client's Reasons for Audit

Two major factors affecting acceptable audit risk are the likely statement users and their intended uses of the statements. The auditor is likely to accumulate more evidence when the statements are to be used extensively, as is often the case for publicly held companies, those with extensive indebtedness, and companies that are to be sold in the near future.

The most likely uses of the statements can be determined from previous experience with the client and discussions with management. Throughout the engagement, the auditor may get additional information about why the client is having an audit and the likely uses of the financial statements. This information may affect the auditor's acceptable audit risk.

Obtain an Understanding with the Client

A clear understanding of the terms of the engagement should exist between the client and the CPA firm. Auditing standards require that auditors document their under-standing with the client, usually in an engagement letter, including the engagement's objectives, the responsibilities of the auditor and management, identification of the financial reporting framework used by management, reference to the expected form and content of the audit report, and the engagement's limitations. For public companies, the audit committee is responsible for hiring the auditor as required by the Sarbanes–Oxley Act. The engagement letter is typically signed by management for private companies.

The engagement letter may also include an agreement to provide other services such as tax returns or management consulting allowed under the Code of Professional Conduct and regulatory requirements. It should also state any

restrictions to be imposed on the auditor's work, deadlines for completing the audit, assistance to be provided by the client's personnel in obtaining records and documents, and schedules to be prepared for the auditor. It often includes an agreement on fees. The engagement letter also serves the purpose of informing the client that the auditor cannot guarantee that all acts of fraud will be discovered.

Engagement letter information is important in planning the audit principally because it affects the timing of the tests and the total amount of time the audit and other services will take. For example, if the deadline for submitting the audit report is soon after the balance sheet date, a significant portion of the audit must be done before the end of the year. If unexpected circumstances arise or if client assistance is not available, arrangements must be made to extend the amount of time for the engagement. Client-imposed restrictions on the audit can affect the procedures performed and possibly even the type of audit opinion issued.

Develop Overall Audit Strategy

After understanding the client's reasons for the audit, the auditor should develop and document a preliminary audit strategy that sets the scope, timing, and direction of the audit and that guides the development of the audit plan. This

strategy considers the nature of the client's business and industry, including areas where there is greater risk of significant misstatements. The auditor also considers other factors such as the number of client locations and the past effectiveness of client controls in developing a preliminary approach to the audit. The planned strategy helps the auditor determine the resources required for the engagement, including engagement staffing.

Select Staff for Engagement The auditor must assign the appropriate staff to the engagement to comply with auditing standards and to promote audit efficiency. One of the underlying principles in auditing standards is that:

Auditors are responsible for having appropriate competence and capabilities to perform the audit

Staff must therefore be assigned with that requirement in mind, and those assigned to the engagement must be knowledgeable about the client's industry. Larger audit engagements are likely to require one or more partners and staff at several experience levels. Individuals in multiple offices of the firm may be included, including offices outside the United States, if the client has operations in numerous locations around the world. Specialists in such technical areas as statistical sampling, business valuation, and

computer risk assessment may also be assigned. On smaller audits, only one or two staff members may be needed.

A major consideration of staffing is the need for continuity from year to year. Continuity helps the CPA firm maintain familiarity with the technical requirements and closer interpersonal relations with client personnel. An inexperienced staff assistant is likely to become the most experienced nonpartner on the engagement within a few years.

Consider a computer manufacturing client with extensive inventory of computers and computer parts where inherent risk for inventory has been assessed as high. It is essential for the staff person doing the inventory portion of the audit to be experienced in auditing inventory. The auditor should also have a good understanding of the computer manufacturing industry. The CPA firm may decide to engage a specialist if no one within the firm is qualified to evaluate whether the inventory is obsolete.

Evaluate Need for Outside Specialists; if the audit requires specialized knowledge, it may be necessary to consult a specialist. Auditing standards establish the requirements for selecting specialists and reviewing their work. Examples include using a diamond expert in evaluating the replacement

cost of diamonds and an actuary for determining the appropriateness of the recorded value of insurance loss reserves. Another common use of specialists is consulting with attorneys on the legal interpretation of contracts and titles or business valuation experts on fair value accounting treatments.

The auditor must have a sufficient understanding of the client's business to recognize whether a specialist is needed. The auditor needs to evaluate the specialist's professional qualifications and understand the objectives and scope of the specialist's work. The auditor should also consider the specialist's relationship to the client, including circumstances that might impair the specialist's objectivity. The use of a specialist does not affect the auditor's responsibility for the audit and the audit report should not refer to the specialist unless the specialist's report results in a modification of the audit opinion.

UNDERSTAND THE CLIENT'S BUSINESS AND INDUSTRY

A thorough understanding of the client's business and industry and knowledge about the company's operations are essential for the auditor to conduct an adequate audit.

Another of the underlying principles in auditing standards states:

The auditor identifies and assesses risks of material misstatement, whether due to fraud or error, based on an understanding of the entity and its environment, including the entity's internal control.

The nature of the client's business and industry affects client business risk and the risk of material misstatements in the financial statements. (Client business risk is the risk that the client will fail to meet its objectives.) In recent years, several factors have increased the importance of understanding the client's business and industry:

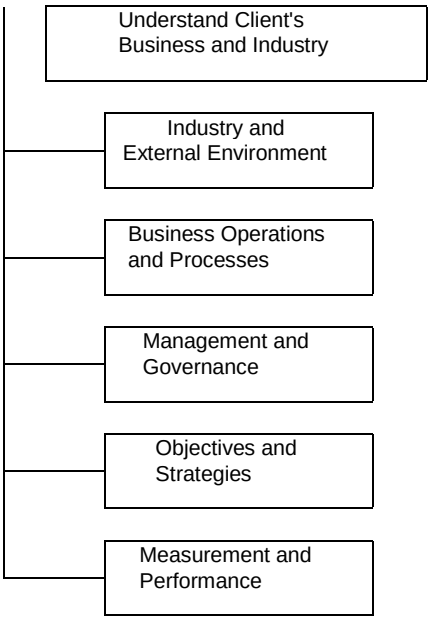
- Recent significant declines in economic conditions around the world are likely to significantly increase a client's business risks. Auditors need to understand the nature of the client's business to understand the impact of major economic downturns on the client's financial statements and ability to continue as a going concern.
- Information technology connects client companies with major customers and suppliers. As a result, auditors need greater knowledge about major customers and suppliers and related risks.

• Clients have expanded operations globally, often through joint ventures or strategic alliances.

• Information technology affects internal client processes, improving the quality and timeliness of accounting information.

• The increased importance of human capital and other intangible assets has increased accounting complexity and the importance of management judgments and estimates.

FIGURE 2 **Strategic Systems Understanding of the Client's Business and Industry**



• Many clients may have invested in complex financial instruments, such as col-lateralized debt obligations or mortgage backed securities, which may have declined in

value, require complex accounting treatments, and often involve unknown counterparties who may create unexpected financial risks for the client.

Auditors consider these factors using a strategic systems approach to understanding the client's business. Figure 2 provides an overview of the approach to understanding the client's business and industry. Next, we will discuss several aspects of this approach.

Industry and External Environment

The three primary reasons for obtaining a good understanding of the client's industry and external environment are:

1. Risks associated with specific industries may affect the auditor's assessment of client business risk and acceptable audit risk — and may even influence auditors against accepting engagements in riskier industries, such as the financial services and health insurance industries.

2. Many inherent risks are common to all clients in certain industries. Familiarity with those risks aids the auditor in assessing their relevance to the client. Examples include potential inventory obsolescence in the fashion clothing industry, accounts receivable collection inherent risk

in the consumer loan industry, and reserve for loss inherent risk in the casualty insurance industry.

3. Many industries have unique accounting requirements that the auditor must understand to evaluate whether the client's financial statements are in accordance with accounting standards. For example, if the auditor is doing an audit of a city government, the auditor must understand governmental accounting and auditing requirements. Unique accounting requirements exist for construction companies, railroads, not-for-profit organizations, financial institutions, and many other organizations.

Many auditor litigation cases result from the auditor's failure to fully understand the nature of transactions in the client's industry. The auditor must also understand the client's external environment, including such things as wide volatility in economic conditions, extent of competition, and regulatory requirements. For example, auditors of utility companies need more than an understanding of the industry's unique regulatory accounting requirements. They must also know how recent deregulation in this industry has increased competition and how fluctuations in energy prices impact firm operations. To develop effective audit plans, auditors of

all companies must have the expertise to assess external environment risks.

Business Operations and Processes

The auditor should understand factors such as major sources of revenue, key customers and suppliers, sources of financing, and information about related parties that may indicate areas of increased client business risk. For example, many technology firms are dependent on one or a few products that may become obsolete due to new technologies or stronger competitors. Dependence on a few major customers may result in material losses from bad debts or obsolete inventory.

Tour Client Facilities and Operations A tour of the client's facilities is helpful in obtaining a better understanding of the client's business operations because it provides an opportunity to observe operations firsthand and to meet key personnel. By viewing the physical facilities, the auditor can assess physical safeguards over assets and interpret accounting data related to assets such as inventory in process and factory equipment. With such first-hand knowledge, the auditor is better able to identify inherent risks, such as unused equipment or potentially unsalable inventory. Discussions with nonaccounting employees during the tour

and throughout the audit also help the auditor learn more about the client's business to aid in assessing inherent risk.

Identify Related Parties Transactions with related parties are important to auditors because accounting standards require that they be disclosed in the financial statements if they are material. A related party is defined in auditing standards as an affiliated company, a principal owner of the client company, or any other party with which the client deals, where one of the parties can influence the management or operating policies of the other. A related party transaction is any transaction between the client and a related party. Common examples include sales or purchase transactions between a parent company and its subsidiary, exchanges of equipment between two companies owned by the same person, and loans to officers. A less common example is the exercise of significant management influence on an audit client by its most important customer.

A transaction with a related party is not an arm's-length transaction. Therefore, there is a risk that they may not be valued at the same amount as a transaction with an independent third party. For example, a company may be able to purchase inventory from a related company at more favorable terms than from an outside vendor. Most auditors

assess inherent risk as high for related parties and related party transactions, because of the accounting disclosure requirements, the lack of independence between the parties involved in the transactions, and the opportunities they may provide to engage in fraudulent financial reporting.

Because material related party transactions must be disclosed, all related parties need to be identified and included in the auditor's permanent files early in the engagement. (The disclosure requirements include the nature of the related party relationship; a description of transactions, including dollar amounts; and amounts due from and to related parties.) Having all related parties included in the permanent audit files, and making sure all auditors on the team know who the related parties are, helps auditors identify undisclosed related party transactions as they do the audit. Auditing standards require the auditor to ask management to identify the entity's related parties and inquire as to whether the entity has entered into any transactions with these related parties and, if so, the type and purpose of the transaction. Those standards also require the auditor to inquire of management and perform other.

Procedures to obtain an understanding of controls that management has established to identify, authorize, and

approve related party transactions. Auditors may also learn about related parties by reviewing SEC filings and examining stockholders' listings to identify principal stockholders.

Because of the lack of independence between related parties, the Sarbanes–Oxley Act prohibits related party transactions that involve personal loans to any director or executive officer of a public company. Banks and other financial institutions, however, are permitted to make normal loans, such as residential mortgages, to their directors and officers using market rates.

Management and Governance

Because management establishes a company's strategies and business processes, an auditor should assess management's philosophy and operating style and its ability to identify and respond to risk, as these significantly influence the risk of material misstatements in the financial statements. Research commissioned by the Committee of Sponsoring Organizations of the Treadway Commission (COSO), Fraudulent Financial Reporting 1998–2007, found that in over 340 instances of fraudulent financial reporting investigated by the SEC, the chief executive officer (CEO) or chief financial officer (CFO) was named as being involved in

perpetrating the fraud, representing almost 90 percent of the cases.

A firm's governance includes its organizational structure, as well as the activities of the board of directors and the audit committee. An effective board of directors helps ensure that the company takes only appropriate risks, while the audit committee, through oversight of financial reporting, can reduce the likelihood of overly aggressive accounting. To gain an understanding of the client's governance system, the auditor should understand how the board and audit committee exercise oversight, including consideration of the company's code of ethics and evaluation of the corporate minutes.

Code of Ethics Companies frequently communicate the entity's values and ethical standards through policy statements and codes of conduct. In response to requirements in the Sarbanes–Oxley Act, the SEC requires each public company to disclose whether it has adopted a code of ethics that applies to senior management, including the CEO, CFO, and principal accounting officer or controller. A company that has not adopted such a code must disclose this fact and explain why it has not done so. The SEC also requires companies to promptly disclose amendments and waivers to

the code of ethics for any of those officers. Auditors should gain knowledge of the company's code of ethics and examine any changes and waivers of the code of conduct that have implications about the governance system and related integrity and ethical values of senior management.

Minutes of Meetings The corporate minutes are the official record of the meetings of the board of directors and stockholders. They include key authorizations and summaries of the most important topics discussed at these meetings and the decisions made by the directors and stockholders. Common authorizations in the minutes include compensation of officers, new contracts and agreements, acquisitions of property, loans, and dividend payments. Examples of other information relevant to the audit include discussions about litigation, a pending issue of stock, or a potential merger.

The auditor should read the minutes to obtain authorizations and other information that is relevant to performing the audit. This information should be included in the audit files by making an abstract of the minutes or by obtaining a copy and underlining significant portions. Before the audit is completed, the auditor must follow up on this information to be sure that management has complied with actions taken by the stockholders and the board of directors. As an illustration,

the authorized compensation of officers should be traced to each individual officer's payroll record as a test of whether the correct total compensation was paid. Similarly, the auditor should compare the authorizations of loans with notes payable to make certain that these liabilities are recorded and key terms disclosed. Litigation, pending stock issues, and merger information may need to be included in footnotes. Auditors often supplement their review of minutes with inquiries of the audit committee or full board about their awareness of events that might affect financial reporting.

Client Objectives and Strategies

Strategies are approaches followed by the entity to achieve organizational objectives. Auditors should understand client objectives related to:

1. Reliability of financial reporting
2. Effectiveness and efficiency of operations
3. Compliance with laws and regulations

Despite management's best efforts, business risks arise that threaten management's ability to achieve its objectives. As a result, knowledge of client objectives and strategies helps the auditor to assess client business risk and inherent risk in the financial statements. For example, product quality can have a significant impact on the financial statements through lost

sales and through warranty and product liability claims. Toyota, Inc., suffered significant losses arising from business risks when production problems involving gas pedals and brakes in several of its most popular vehicles triggered significant declines in sales and stockholder value.

As part of understanding the client's objectives related to compliance with laws and regulations, the auditor should become familiar with the terms of client contracts and other legal obligations. These can include such diverse items as long-term notes and bonds payable, stock options, pension plans, contracts with vendors for future delivery of supplies, government contracts for completion and delivery of manufactured products, royalty agreements, union contracts, and leases. Most contracts are of primary interest in individual parts of the audit and, in practice, receive special attention during the different phases of the detailed tests. For example, the provisions of a pension plan will receive substantial emphasis as a part of the audit of the unfunded liability for pensions. The auditor should review and abstract the documents early in the engagement to gain a better perspective of the organization and to better assess inherent risks. Later, these documents can be examined more carefully as a part of the tests of individual audit areas.

Measurement and Performance

A client's performance measurement system includes key performance indicators that management uses to measure progress toward its objectives. These indicators go beyond financial statement figures, such as sales and net income, to include measures tailored to the client and its objectives. Such key performance indicators may include market share, sales per employee, unit sales growth, unique visitors to a Web site, same-store sales, sales by country, and sales per square foot for a retailer.

Inherent risk of financial statement misstatements may be increased if the client has set unreasonable objectives or if the performance measurement system encourages aggressive accounting. For example, a company's objective may be to obtain the leading market share of industry sales. If management and salespeople are compensated based on achieving this goal, there is increased incentive to record sales before they have been earned or record sales for nonexistent transactions. In such a situation, the auditor is likely to increase assessed inherent risk and the extent of testing for the occurrence transaction-related audit objective for sales.

Performance measurement includes ratio analysis and benchmarking against key competitors. As part of understanding the client's business, the auditor should perform ratio analysis or review the client's calculations of key performance ratios. Performing preliminary analytical procedures is the fourth step in the planning process and is discussed later in this chapter.

ASSESS CLIENT BUSINESS RISK

The auditor uses knowledge gained from the understanding of the client's business and industry to assess client business risk, the risk that the client will fail to achieve its objectives. Client business risk can arise from any of the factors affecting the client and its environment, such as significant declines in the economy that threaten the client's cash flows, new technology eroding a client's competitive advantage, or a client failing to execute its strategies as well as its competitors The auditor's primary concern is the risk of material misstatements in the financial statements due to client business risk. For example, companies often make strategic acquisitions or mergers that depend on successfully combining the operations of two or more companies. If the planned synergies do not develop, the fixed assets and

goodwill recorded in the acquisition may be impaired, affecting the fair presentation in the financial statements.

FIGURE 3 **Understanding the Client's Business and Industry, Client Business Risk, and Risk of Material Misstatements**

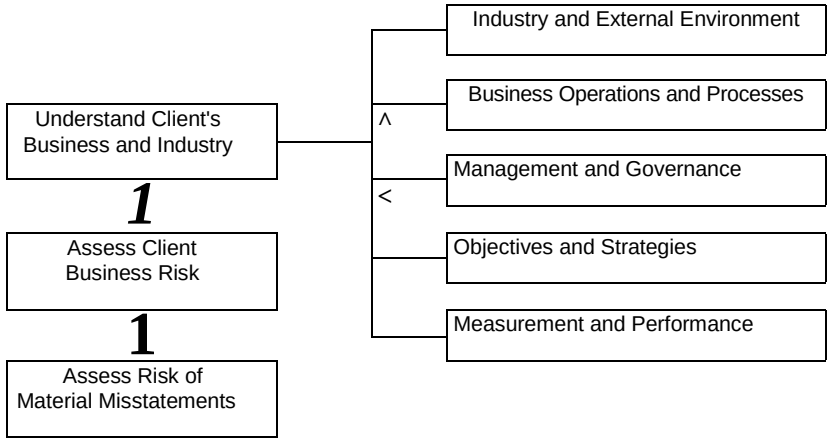


Figure 3 summarizes the relationship among the client's business and industry, client business risk, and the auditor's assessment of the risk of material financial statement misstatements. The auditor's assessment of client business risk considers the client's industry and other external factors, as well as the client's business strategies, processes and other internal factors. The auditor also considers management controls that may mitigate business risk, such as effective risk assessment practices and corporate governance. Remaining risk after considering the effectiveness of top management controls is sometimes called residual risk. After evaluating client business risk, the auditor can then assess the

risk of material misstatement in the financial statements, and then apply the audit risk model to determine the appropriate extent of audit evidence.

Management is a primary source for identifying client business risks. In public companies, management should conduct thorough evaluations of relevant client business risks that affect financial reporting to be able to certify quarterly and annual financial statements, and to evaluate the effectiveness of disclosure controls and procedures required by the Sarbanes–Oxley Act. Boards of directors and senior executives increasingly implement an enterprise-wide approach to risk management as described in the vignette.

Sarbanes–Oxley requires management to certify that it has designed disclosure controls and procedures to ensure that material information about business risks are communicated to management and disclosed to external stakeholders, such as investors. These procedures cover a broader range of information than is covered by an issuer's internal controls for financial reporting. The procedures should capture information that is relevant to assess the need to disclose developments and risks that pertain to the company's business. For example, if a subsidiary engages in significant hedging activities, controls should exist so that top

management is informed of and discloses this information. Inquiries of management about client business risks it has identified, in advance of certifying quarterly and annual financial statements, may provide a significant source of information for auditors about client business risks affecting financial reporting.

The Sarbanes–Oxley Act also requires management to certify that it has informed the auditor and audit committee of any significant deficiencies in internal control, including material weaknesses. Such information enables auditors to better evaluate how internal controls may affect the likelihood of material misstatements in financial statements.

Auditing standards require the engagement team, including the engagement partner, to discuss the susceptibility of the entity's financial statements to material misstatement. The purpose of this required engagement-team discussion is to provide an opportunity for more experienced team members to share insights based on their knowledge of the entity and for the team to exchange information about client business risks and how the financial statements might be susceptible to material misstatement due to fraud or error. These discussions also help the engagement team members gain a better understanding of the potential for material

misstatement in the specific financial statement areas assigned to them.

PERFORM PRELIMINARY ANALYTICAL PROCEDURES

Auditors perform preliminary analytical procedures to better understand the client's business and to assess client business risk. One such procedure compares client ratios to industry or competitor benchmarks to provide an indication of the company's performance. Such preliminary tests can reveal unusual changes in ratios compared to prior years, or to industry averages, and help the auditor identify areas with increased risk of misstatements that require further attention during the audit.

The Hillsburg Hardware Co. example is used to illustrate the use of preliminary analytical procedures as part of audit planning. This is followed by a summary of the audit planning process, and further discussion of the use of analytical procedures throughout the audit.

Table 1 presents key financial ratios for Hillsburg Hardware Co., along with comparative industry information that auditors might consider during audit planning.

TABLE 1 Examples of Planning Procedures

Selected Ratios	Hillsburg 12/31/13	Industry 12/31/	Hillsburg 12/31/1	Industry 12/31/
Short-Term Debt-Paying Ability				
Cash ratio	0.06	0.22	0.06	0.20
Quick ratio	1.57	3.10	1.45	3.00
Current ratio	3.86	5.20	4.04	5.10
Liquidity Activity Ratios				
Accounts receivable turnover	7.59	12.15	7.61	12.25
Days to collect accounts receivable	48.09	30.04	47.96	29.80
Inventory turnover	3.36	5.20	3.02	4.90
Days to sell inventory	108.63	70.19	120.86	74.49
Ability to Meet Long-Term Obligations				
Debt to equity	1.73	2.51	1.98	2.53
Times interest earned	3.06	5.50	3.29	5.60
Profitability Ratios				
Gross profit percent	27.85	31.00	27.70	32.00
Profit margin	0.05	0.07	0.05	0.08
Return on assets	0.09	0.09	0.08	0.09
Return on common equity	0.26	0.37	0.24	0.35

These ratios are based on the Hillsburg Hardware Co. financial statements. (See the glossy insert in this textbook.) Hillsburg's Annual Report to Shareholders described the company as a wholesale distributor of hardware equipment to independent, high-quality hardware stores in the midwestern United States. The company is a niche provider in the overall hardware industry, which is dominated by national chains like Home Depot and Lowe's. Hillsburg's auditors identified potential increased competition from national chains as a

specific client business risk. Hillsburg's market consists of smaller, independent hardware stores. Increased competition could affect the sales and profitability of these customers, likely affecting Hillsburg's sales and the value of assets such as accounts receivable and inventory. An auditor might use ratio information to identify areas where Hillsburg faces increased risk of material misstatements.

The profitability measures indicate that Hillsburg is performing fairly well, despite the increased competition from larger national chains. Although lower than the industry averages, the liquidity measures indicate that the company is in good financial condition, and the leverage ratios indicate additional borrowing capacity. Because Hillsburg's market consists of smaller, independent hardware stores, the company holds more inventory and takes longer to collect receivables than the industry average.

In identifying areas of specific risk, the auditor is likely to focus on the liquidity activity ratios. Inventory turnover has improved but is still lower than the industry average. Accounts receivable turnover has declined slightly and is lower than the industry average. The collectability of accounts receivable and inventory obsolescence are likely to be assessed as high inherent risks and will therefore likely

warrant additional attention in the current year's audit. These areas likely received additional attention during the prior year's audit as well.

ANALYTICAL PROCEDURES

Analytical procedures are one of the eight types of evidence. Because of the increased emphasis on analytical procedures in professional practice, this section moves beyond the preliminary analytical procedures discussed earlier in this chapter to discuss the uses of analytical procedures throughout the audit.

Analytical procedures are defined by auditing standards as evaluations of financial information through analysis of plausible relationships among financial and nonfinancial data. Analytical procedures use comparisons and relationships to assess whether account balances or other data appear reasonable relative to the auditor's expectations.

When performing analytical procedures, the auditor's investigation of unusual fluctuations is triggered by relationships among financial and nonfinancial data that differ from expectations developed by the auditor. For example, the auditor might compare current-year recorded commission expense to an expectation of commission expense based on total recorded sales multiplied by the

average commission rate as a test of the overall reasonableness of recorded commissions. For this analytical procedure to be relevant and reliable, the auditor has likely concluded that recorded sales are correctly stated, all sales earn a commission, and that the average actual commission rate is readily determinable.

Analytical procedures may be performed at any of three times during an engagement:

1. Analytical procedures are required in the planning phase to assist in determining the nature, extent, and timing of audit procedures. This helps the auditor identify significant matters requiring special consideration later in the engagement. For example, the calculation of inventory turnover before inventory price tests are done may indicate the need for special care during those tests. Analytical procedures done in the planning phase typically use data aggregated at a high level, and the sophistication, extent, and timing of the procedures vary among clients. For some clients, the comparison of prior-year and current-year account balances using the unaudited trial balance may be sufficient. For other clients, the procedures may involve extensive analysis of quarterly financial statements based on the auditor’s judgment.

2. Analytical procedures are often done during the testing phase of the audit as a substantive test in support of account balances. These tests are often done in conjunction with other audit procedures. For example, the prepaid portion of each insurance policy might be compared with the same policy for the previous year as a part of doing tests of prepaid insurance. The assurance provided by analytical procedures depends on the predictability of the relationship, as well as the precision of the expectation and the reliability of the data used to develop the expectation. When analytical procedures are used during the testing phase of the audit, auditing standards require the auditor to document in the working papers the expectation and factors considered in its development. The auditor is also required to evaluate the reliability of the data used to develop the expectation, including the source of the data and controls over the data's preparation. 3. Analytical procedures are also required during the completion phase of the audit. Such tests serve as a final review for material misstatements or financial problems and help the auditor take a final "objective look" at the audited financial statements. Typically, a senior partner with extensive knowledge of the client's business conducts the analytical procedures during the final review of the audit files

and financial statements to identify possible oversights in an audit.

Figure4 shows the purposes of analytical procedures during each of the three phases. The shaded boxes indicate when a purpose is applicable in each phase. More than one purpose may be indicated. Notice how analytical procedures are done during the planning phase for all four purposes, while procedures during the other two phases are used primarily to determine appropriate audit evidence and to reach conclusions about the fair presentation of financial statements.

FIGURE 4 Timing and Purposes of Analytical Procedures

Purpose	Phase		
	(Required) Planning Phase	Testing Phase	(Required) Completion Phase
Understand the client's business and industry	Primary purpose		
Assess going concern	Secondary purpose		Secondary purpose
Indicate possible misstatements (attention directing)	Primary purpose	Secondary purpose	Primary purpose
Reduce detailed tests	Secondary purpose	Primary purpose	

FIVE TYPES OF ANALYTICAL PROCEDURES

The usefulness of analytical procedures as audit evidence depends significantly on the auditor developing an

expectation of what a recorded account balance or ratio should be, regardless of the type of analytical procedures used. Auditors develop an expectation of an account balance or ratio by considering information from prior periods, industry trends, client-prepared budgeted expectations, and nonfinancial information. The auditor typically compares the client's balances and ratios with expected balances and ratios using one or more of the following types of analytical procedures. In each case, auditors compare client data with:

1. Industry data
2. Similar prior-period data
3. Client-determined expected results
4. Auditor-determined expected results
5. Expected results using nonfinancial data

Compare Client **and** Industry Data

Suppose that you are doing an audit and obtain the following information about the client and the average company in the client's industry:

	Client		Industry	
	2013	2012	2013	2012
Inventory turnover	3.4	3.5	3.9	3.4
Gross margin percent	26.3%	26.4%	27.3%	26.2%

If we look only at client information for the two ratios shown, the company appears to be stable with no apparent indication of difficulties. However, if we use industry data to develop expectations about the two ratios for 2013, we should expect both ratios for the client to increase. Although these two ratios by themselves may not indicate significant problems, this data illustrates how developing expectations using industry data may provide useful information about the client's performance and potential misstatements. Perhaps the company has lost market share, its pricing has not been competitive, it has incurred abnormal costs, or perhaps it has obsolete items in inventory or made errors in recording purchases. The auditor needs to determine if either of the last two occurred to have reasonable assurance that the financial statements are not misstated.

Dun & Bradstreet, Standard and Poor's, and other analysts accumulate financial information for thousands of companies and compile the data for different lines of business. Many CPA firms purchase this industry information for use as a basis for developing expectations about financial ratios in their audits.

The most important benefits of industry comparisons are to aid in understanding the client's business and as an indication

of the likelihood of financial failure. They are less likely to help auditors identify potential misstatements. Financial information collected by the Risk Management Association, for example, is primarily of a type that bankers and other credit analysts use in evaluating whether a company will be able to repay a loan. That same information is useful to auditors in assessing the relative strength of the client's capital structure, its borrowing capacity, and the likelihood of financial failure.

However, a major weakness in using industry ratios for auditing is the difference between the nature of the client's financial information and that of the firms making up the industry totals. Because the industry data are broad averages, the comparisons may not be meaningful. Often, the client's line of business is not the same as the industry standards. In addition, different companies follow different accounting methods, and this affects the comparability of data. For example, if most companies in the industry use FiFO inventory valuation and straight-line depreciation and the audit client uses LIFO and double-declining-balance depreciation, comparisons may not be meaningful. This does not mean that industry comparisons should be avoided. Rather, it is an indication of the need for care in using

industry data to develop expectations about financial relationships and in interpreting the results. One approach to overcome the limitations of industry averages is to compare the client to one or more benchmark firms in the industry.

Compare Client Data with Similar Prior-Period Data

Suppose that the gross margin percentage for a company has been between 26 and 27 percent for each of the past 4 years but has dropped to 23 percent in the current year. This decline in gross margin should be a concern to the auditor if a decline is not expected. The cause of the decline could be a change in economic conditions. But, it could also be caused by misstatements in the financial statements, such as sales or purchase cutoff errors, unrecorded sales, overstated accounts payable, or inventory costing errors. The decline in gross margin is likely to result in an increase in evidence in one or more of the accounts that affect gross margin. The auditor needs to determine the cause of the decline to be confident that the financial statements are not materially misstated.

A wide variety of analytical procedures allow auditors to compare client data with similar data from one or more prior periods. Here are some common examples:

Compare the Current Year's Balance with that of the Preceding Year One of the easiest ways to perform this test

is to include the preceding year's adjusted trial balance results in a separate column of the current year's trial balance spreadsheet. The auditor can easily compare the current year's balance and previous year's balance to decide, early in the audit, whether an account should receive more than the normal amount of attention because of a significant change in the balance. For example, if the auditor observes a substantial increase in supplies expense, the auditor should determine whether the cause was an increased use of supplies, an error in the account due to a misclassification, or a misstatement of supplies inventory.

Compare the Detail of a Total Balance with Similar Detail for the Preceding Year If there have been no significant changes in the client's operations in the current year, much of the detail making up the totals in the financial statements should also remain unchanged. By briefly comparing the detail of the current period with similar detail of the preceding period, auditors often isolate information that needs further examination. Comparison of details may take the form of details over time, such as comparing the monthly totals for the current year and preceding year for sales, repairs, and other accounts, or details at a point in time, such as comparing the details of loans payable at the end of

the current year with the detail at the end of the preceding year. In each of these examples, the auditor should first develop an expectation of a change or lack thereof before making the comparison.

Compute Ratios and **Percent Relationships for Comparison with Previous Years** Comparing totals or details with previous years has two shortcomings. First, it fails to consider growth or decline in business activity. Second, relationships of data to other data, such as sales to cost of goods sold, are ignored. Ratio and percent relationships overcome both shortcomings. For example, the gross margin is a common percent relationship used by auditors.

Numerous potential comparisons of current- and prior-period data extend beyond those normally available from industry data. For example, the percent of each expense category to total sales can be compared with that of previous years. Similarly, in a multiunit operation such as a retail chain, internal data comparisons for each unit can be made with previous periods.

Auditors often prepare common-size financial statements for one or more years that display all items as a percent of a common base, such as sales. Common-size financial

statements allow for comparison between companies or for the same company over different time periods, revealing trends and providing insight into how different companies compare. Common-size income statement data for the past three years for Hillsburg Hardware are included in Figure 5.

HILLSBURG HARDWARE CO.

COMMON-SIZE INCOME STATEMENT
Three Years Ending December 31, 2013

	2013		2012		2011	
	(000) Preliminary	% of Net Sales	(000) Audited	% of Net Sales	(000) Audited	% of Net Sales
Sales	$144,328	100.87	$132,421	100.91	$123,737	100.86
Less: Returns and allowances	1,242	0.87	1,195	0.91	1,052	0.86
Net sales	143,086	100.00	131,226	100.00	122,685	100.00
Cost of goods sold	103,241	72.15	94,876	72.30	88,724	72.32
Gross profit	39,845	27.85	36,350	27.70	33,961	27.68
Selling expense						
Salaries and commissions	7,739	5.41	7,044	5.37	6,598	5.38
Sales payroll taxes	1,422	0.99	1,298	0.99	1,198	0.98
Travel and entertainment	1,110	0.78	925	0.70	797	0.65
Advertising	2,611	1.82	1,920	1.46	1,790	1.46
Sales and promotional literature	322	0.22	425	0.32	488	0.40
Sales meetings and training	925	0.65	781	0.60	767	0.62
Miscellaneous sales expense	681	0.48	506	0.39	456	0.37
Total selling expense	14,810	10.35	12,899	9.83	12,094	9.86
Administration expense						
Executive and office salaries	5,524	3.86	5,221	3.98	5,103	4.16
Administrative payroll taxes	682	0.48	655	0.50	633	0.52
Travel and entertainment	562	0.39	595	0.45	542	0.44
Computer maintenance and supplies	860	0.60	832	0.63	799	0.65
Stationery and supplies	763	0.53	658	0.50	695	0.57
Postage	244	0.17	251	0.19	236	0.19
Telephone and fax	722	0.51	626	0.48	637	0.52
Rent	312	0.22	312	0.24	312	0.25
Legal fees and retainers	383	0.27	321	0.25	283	0.23
Auditing and related services	303	0.21	288	0.22	265	0.22
Depreciation	1,452	1.01	1,443	1.10	1,505	1.23
Bad debt expense	3,323	2.32	3,394	2.59	3,162	2.58
Insurance	723	0.51	760	0.58	785	0.64
Office repairs and maintenance	844	0.59	538	0.41	458	0.37
Miscellaneous office expense	644	0.45	621	0.47	653	0.53
Miscellaneous general expense	324	0.23	242	0.18	275	0.22
Total administrative expenses	17,665	12.35	16,757	12.77	16,343	13.32

Total selling and administrative expenses	32,475	22.70	29,656	22.60	28,437	23.18
Earnings from operations	7,370	5.15	6,694	5.10	5,524	4.50
Other income and expense						
Interest expense	2,409	1.68	2,035	1.55	2,173	1.77
Gain on sale of assets	(720)	(0.50)	0	0.00	0	0.00
Earnings before income taxes	5,681	3.97	4,659	3.55	3,351	2.73
Income taxes	1,747	1.22	1,465	1.12	1,072	0.87
Net income	$ 3,934	2.75	$ 3,194	2.43	$ 2,279	1.86

The auditor should calculate income statement account balances as a percent of sales when the level of sales has changed from the prior year — a likely occurrence in many businesses. Hillsburg's sales have increased significantly over the prior year. Note that accounts such as cost of goods sold, as well as sales salaries and commissions have also increased significantly but are fairly consistent as a percent of sales, which we expect for these accounts.

The auditor is likely to require further explanation and corroborating evidence for the changes in advertising, bad debt expense, and office repairs and maintenance.

- Note that advertising expense has increased as a percent of sales. One possible explanation is the development of a new advertising campaign.
- The dollar amount of bad debt expense has not changed significantly but has decreased as a percent of sales. The auditor needs to gather additional evidence to determine whether bad debt expense and the allowance for doubtful accounts are understated.

- Repairs and maintenance expense has also increased. Fluctuations in this account are not unusual if the client has incurred unexpected repairs. The auditor should investigate major expenditures in this account to determine whether they include any amounts that should be capitalized as a fixed asset.

Compare Client Data with Client-Determined Expected Results

Most companies prepare budgets for various aspects of their operations and financial results. Because budgets represent the client's expectations for the period, auditors should investigate the most significant differences between budgeted and actual results, as these areas may contain potential misstatements. The absence of differences may indicate that misstatements are unlikely. For example, audits of local, state, and federal governmental units commonly use this type of analytical procedure.

When client data are compared with budgets, there are two special concerns. First, the auditor must evaluate whether the budgets were realistic plans. In some organizations, budgets are prepared with little thought or care and therefore are not helpful in developing auditor expectations. A discussion of budget procedures with client personnel can provide insights

about this concern. The second concern is the possibility that current financial information was changed by client personnel to conform to the budget. If that has occurred, the auditor will find no differences in comparing actual data with budgeted data, even if there are misstatements in the financial statements. Assessing control risk and detailed audit tests of actual data are usually done to minimize this concern.

Compare Client Data with Auditor-Determined Expected Results

Another common comparison of client data with expected results occurs when the auditor calculates the expected balance for comparison with the actual balance. In this type of analytical procedure, the auditor makes an estimate of what an account balance should be by relating it to some other balance sheet or income statement account or accounts or by making a projection based on nonfinancial data or some historical trend.

Compare Client Data with Expected Results Using Nonfinancial Data

Suppose that you are auditing a hotel. You may develop an expectation for total revenue from rooms by multiplying the number of rooms, the average daily rate for each room, and the average occupancy rate. You can then compare your

estimate with recorded revenue as a test of the reasonableness of recorded revenue. The same approach can be applied to create estimates in other situations, such as tuition revenue at universities (average tuition multiplied by enrollment), factory payroll (total hours worked times the wage rate), and cost of materials sold (units sold times materials cost per unit).

The major concern in using nonfinancial data, however, is the accuracy of the data. In the hotel example, you should not use an estimated calculation of hotel revenue as audit evidence unless you are satisfied with the reasonableness of the count of the number of rooms, average room rate, and average occupancy rate. Obviously, the accuracy of the occupancy rate is more difficult to evaluate than the other two items.

COMMON FINANCIAL RATIOS

Auditors' analytical procedures often include the use of general financial ratios during planning and final review of the audited financial statements. These are useful for understanding recent events and the financial status of the business and for viewing the statements from the perspective of a user. The general financial analysis may be effective for identifying possible problem areas, where the auditor may do

additional analysis and audit testing, as well as business problem areas in which the auditor can provide other assistance. When using these ratios, auditors must be sure to make appropriate comparisons. The most important comparisons are to those of previous years for the company and to industry averages or similar companies for the same year.

Ratios and other analytical procedures are normally calculated using spreadsheets and other types of audit software, in which several years of client and industry data can be maintained for comparative purposes. Ratios can be linked to the trial balance so that calculations are automatically updated as adjusting entries are made to the client's statements. For example, an adjustment to inventory and cost of goods sold affects a large number of ratios, including inventory turnover, the current ratio, gross margin, and other profitability measures.

Short-term Debt-Paying Ability

We next examine some widely used financial ratios. The following computations are based on the 2013 financial statements of Hillsburg Hardware Co.,

Cash ratio = $\frac{cash+marketable\ securities}{current\ liabilities} = \frac{828}{13216} = 0.06$

current ratio = $\frac{current\ assets}{current\ liabilities} = \frac{51027}{13216} = 3.86$

Companies need a reasonable level of liquidity to pay their debts as they come due, and these three ratios measure liquidity. It is apparent by examining the three ratios that the cash ratio may be useful to evaluate the ability to pay debts immediately, whereas the current ratio requires the conversion of assets such as inventory and accounts receivable to cash before debts can be paid. The most important difference between the quick and current ratios is the inclusion of inventory in current assets for the current ratio.

Liquidity Activity Ratios

Accounts receivable turnover $= \frac{net\ sales}{average\ gross\ receivables} =$

$$= \frac{143086}{((18957+1240)+(16210+1311))/2} = 7.59$$

Days to collect receivables $= \frac{365\ days}{account\ receivable\ turnover} =$

$$= \frac{365\ \text{days}}{7.59} = 48.09\ \text{days}$$

Inventory turnover $= \frac{cost\ of\ goods\ sold}{average\ inventory} =$

$$= \frac{103241}{(29865+31600)/2} = 3.36$$

Days to sell inventory $= \frac{365\ days}{inventory\ \ turnover} =$

$$= \frac{365 \text{ days}}{3.36} = 108.63 \text{ days}$$

If a company does not have sufficient cash and cash-like items to meet its obligations, the key to its debt-paying ability is the time it takes the company to convert less-liquid current assets into cash. This is measured by the liquidity activity ratios.

The activity ratios for accounts receivable and inventory are especially useful to auditors, who often use trends in the accounts receivable turnover ratio to assess the reasonableness of the allowance for uncollectible accounts. Auditors use trends in the inventory turnover ratio to identify potential inventory obsolescence. Average days to collect is a different way of looking at the average accounts receivable turnover data. The same is true of average days to sell compared to average inventory turnover.

Ability to Meet Long-term Debt Obligations

A company's long-run solvency depends on the success of its operations and on its ability to raise capital for expansion, as well as its ability to make principal and interest payments. Two ratios are key measures creditors and investors use to assess a company's ability to pay its debts.

The debt-to-equity ratio shows the extent of the use of debt in financing a company. If the debt-to-equity ratio is too high, it may indicate that the company has used up its borrowing capacity and has no cushion for additional debt. If it is too low, it may mean that available leverage is not being used to the owners' benefit.

Debt to equity $= \frac{total\ liabilites}{total\ equity} =$

$= \frac{13216+25688}{22463} = 1.73$

Times interest earned $= \frac{operating\ income}{interest\ expense} =$

$= \frac{7370}{2409} = 3.06$

The ability to make interest payments depends on the company's ability to generate positive cash flow from operations. The times interest earned ratio shows whether the company can comfortably make its interest payments, assuming that earnings trends are stable.

Profitability Ratios

A company's ability to generate cash for payment of obligations, expansion, and dividends is heavily dependent on profitability. The most widely used profitability ratio is

earnings per share. Auditors calculate additional ratios to provide further insights into operations.

Gross profit percent shows the portion of sales available to cover all expenses and profit after deducting the cost of the product. Auditors find this ratio especially useful for assessing misstatements in sales, cost of goods sold, accounts receivable, and inventory.

Profit margin is similar to gross profit margin but subtracts both cost of goods sold and operating expenses in making the calculations. This ratio enables auditors to assess potential misstatements in operating expenses and related balance sheet accounts. Return on assets and return on common equity are measures of overall profitability of a company. These ratios show a company's ability to generate profit for each dollar of assets and equity.

Earnings per share $= \frac{net\ income}{average\ common\ shares\ outstanding} =$

$= \frac{3934}{5000} = 0.79$

Gross profit percent $= \frac{net\ sales - cost\ of\ good\ sold}{net\ sales} =$

$= \frac{143086 - 103241}{143086} = 27.85\%$

Profit margin $= \frac{operating\ \ income}{net\ sales} =$

$= \frac{7370}{143086} = 0.05$

Return on assets $= \frac{income\ before\ taxes}{average\ total\ assets} =$

$$= \frac{5681}{(61367+60791)/2} = 0.09$$

Return on common equity $= \frac{income\ before\ taxes - preferrd\ dividends}{average\ stockholders'\ equity} =$

$$= \frac{5681-0}{(22463+20479)/2} = 0.26$$

MULTIPLE CHOICE QUESTIONS FROM CPA EXAMINATIONS

The following questions concern the planning of the engagement. Select the best response.

1. Which of the following is an effective audit planning procedure that helps prevent misunderstandings and inefficient use of audit personnel?

(a) Arrange to make copies, for inclusion in the audit files, of those client supporting documents examined by the auditor.

(b) Arrange to provide the client with copies of the audit programs to be used during the audit.

(c) Arrange a preliminary conference with the client to discuss audit objectives, fees, timing, and other information.

(d) Arrange to have the auditor prepare and post any necessary adjusting or reclassification entries prior to final closing.

2. Which of the following circumstances would most likely cause an auditor to suspect that material misstatements exist in the financial statements?

(a) The assumptions used in developing the prior year's accounting estimates have changed.

(b) Differences between reconciliations of control accounts and subsidiary records are not investigated.

(c) More confirmation requests were sent this year relative to last year.

(d) Management consults with another CPA firm about complex accounting matters.

3. Which of the following will most likely indicate the existence of related parties?

(a) Writing down obsolete inventory prior to year end.

(b) Failing to correct deficiencies in the client's internal control.

(3) An unexplained increase in gross margin.

(4) Borrowing money at a rate significantly below the market rate.

4. Which of the following is least likely to be included in the auditor's engagement letter?

(a) Details about the preliminary audit strategy.

(b) Overview of the objectives of the engagement.

(c) Statement that management is responsible for the financial statements.

(d) Description of the level of assurance obtained when conducting the audit.

The following questions pertain to client acceptance. Choose the best response.

5. When approached to perform an audit for the first time, the CPA should make inquiries of the predecessor auditor. This is a necessary procedure because the predecessor may be able to provide the successor with information that will assist the successor in determining whether

(a) The predecessor's work should be used.

(b) The company follows the policy of rotating its auditors.

(c) In the predecessor's opinion internal control of the company has been satisfactory.

(d) The engagement should be accepted.

6. A successor would most likely make specific inquiries of the predecessor auditor regarding

(a) Specialized accounting principles of the client's industry.
(b) The competency of the client's internal audit staff.
(c) The uncertainty inherent in applying sampling procedures.
(d) Disagreements with management as to auditing procedures.
7. Which of the following circumstances would most likely pose the greatest risk in accepting a new audit engagement?
(a) Staff will need to be rescheduled to cover this new client.
(b) There will be a client-imposed scope limitation.
(c) The firm will have to hire a specialist in one audit area.
(d) The client's financial reporting system has been in place for 10 years.
8. Analytical procedures used in planning an audit should focus on identifying
(a) Material weaknesses in internal control.
(b) The predictability of financial data from individual transactions.
(c) The various assertions that are embodied in the financial statements.
(d) Areas that may represent specific risks relevant to the audit.
9 . Which of the following situations has the best chance of being detected when a CPA compares 2013 revenues and expenses with the prior year and investigates all changes exceeding a fixed percent?
(a) An increase in property tax rates has not been recognized in the company's 2013 accrual.
(b) The cashier began lapping accounts receivable in 2013.
(c) Because of worsening economic conditions, the 2013 provision for uncollectible accounts was inadequate.

(d) The company changed its capitalization policy for small tools in 2013.

10. Which of the following would not be considered to be an analytical procedure?

(a) Estimating payroll expense by multiplying the number of employees by the average hourly wage rate and the total hours worked.

(b) Projecting the error rate by comparing the results of a statistical sample with the actual population characteristics.

(c) Computing accounts receivable turnover by dividing credit sales by the average net receivables.

(d) Developing the expected current year sales based on the sales trend of the prior five years.

Chapter (2)

AUDIT SAMPLING

REPRESENTATIVE SAMPLES

When selecting a sample from a population, the auditor strives to obtain a representative sample. A representative sample is one in which the characteristics in the sample are approximately the same as those of the population. This means that the sampled items are similar to the items not sampled. Assume a client's internal controls require a clerk to attach a shipping document to every duplicate sales invoice, but the clerk fails to follow the procedure exactly 3 percent of the time. If the auditor selects a sample of 100 duplicate sales invoices and finds three are missing attached shipping documents, the sample is highly representative. If two or four such items are found in the sample, the sample is reasonably representative. If no or many missing items are found, the sample is no representative.

In practice, auditors never know whether a sample is representative, even after all testing is complete. (The only way to know if a sample is representative is to subsequently audit the entire population.) However, auditors can increase the likelihood of a sample being representative by using care in designing the sampling process, sample selection, and evaluation of sample results. A sample result can lead to an

incorrect conclusion due to sampling error or nonsampling error. The risk of these two types of errors occurring is called sampling risk and nonsampling risk.

Sampling risk is the risk that an auditor reaches an incorrect conclusion because the sample is not representative of the population. Sampling risk is an inherent part of sampling that results from testing less than the entire population. For example, assume the auditor decided that a control is not effective if there is a population exception rate of 6 percent. Assume the auditor accepts the control as effective based on tests of the control with a sample of 100 items that had two exceptions. If the population actually has an 8 percent exception rate, the auditor incorrectly accepted the population because the sample was not sufficiently representative of the population.

Auditors have two ways to control sampling risk:

1. Adjust sample size

2. Use an appropriate method of selecting sample items from the population

Increasing sample size reduces sampling risk, and vice versa. At one extreme, a sample of all the items of a population has

a zero sampling risk. At the other extreme, a sample of one or two items has an extremely high sampling risk.

Using an appropriate sample selection method increases the likelihood of representativeness. This does not eliminate or even reduce sampling risk, but it does allow the auditor to measure the risk associated with a given sample size if statistical methods of sample selection and evaluation are used.

Nonsampling risk is the risk that the auditor reaches an incorrect conclusion for any reason not related to sampling risk. The two causes of nonsampling risk are the auditor's failure to recognize exceptions and inappropriate or ineffective audit procedures.

An auditor might fail to recognize an exception because of exhaustion, boredom, or lack of understanding of what to look for. In the preceding example, assume 3 shipping documents were not attached to duplicate sales invoices in a sample of 100. If the auditor concluded that no exceptions existed, that is a nonsampling error. An ineffective audit procedure for detecting the exceptions in question would be to examine a sample of shipping documents and determine whether each is attached to a duplicate sales invoice, rather

than to examine a sample of duplicate sales invoices to determine if shipping documents are attached. In this case, the auditor has done the test in the wrong direction by starting with the shipping document instead of the duplicate sales invoice. Careful design of audit procedures, proper instruction, supervision, and review are ways to control nonsampling risk.

STATISTICAL VERSUS NONSTATISTICAL SAMPLING AND PROBABILISTIC VERSUS NONPROBABILISTIC SAMPLE SELECTION

Before discussing the methods of sample selection to obtain representative samples, it is useful to make distinctions between statistical versus nonstatistical sampling, and probabilistic versus nonprobabilistic sample selection.

Audit sampling methods can be divided into two broad categories: statistical sampling and nonstatistical sampling. These categories are similar in that they both involve three phases:

1. Plan the sample
2. Select the sample and perform the tests
3. Evaluate the results

The purpose of planning the sample is to make sure that the audit tests are per-formed in a manner that provides the desired sampling risk and minimizes the likelihood of nonsampling error. Selecting the sample involves deciding how a sample is selected from the population. The auditor can perform the audit tests only after the sample items are selected. Evaluating the results is the drawing of conclusions based on the audit tests.

Assume that an auditor selects a sample of 100 duplicate sales invoices from a population, tests each to determine whether a shipping document is attached, and determines that there are three exceptions. Let's look at those actions step-by-step:

• Decide that a sample size of 100 is needed.	1. Plan the sample
•Decide which 100 items to select from the population.	2. Select the sample Perform the tests
• Reach conclusions about the likely exception rate in the total population when the sample	3. Evaluate the results

Statistical sampling differs from nonstatistical sampling in that, by applying mathematical rules, auditors can quantify (measure) sampling risk in planning the sample (step 1) and in evaluating the results (step 3). (You may remember calculating a statistical result at a 95 percent confidence level

in a statistics course. A 95 percent confidence level provides a 5 percent sampling risk.)

In **nonstatistical sampling**, auditors do not quantify sampling risk. However, a properly designed nonstatistical sample that considers the same factors as a properly designed statistical sample can provide results that are as effective as a properly designed statistical sample.

Probabilistic Versus Nonprobabilistic Sample Selection

Both probabilistic and nonprobabilistic sample selection fall under step 2. When using probabilistic sample selection, the auditor randomly selects items such that each population item has a known probability of being included in the sample. This process requires great care and uses one of several methods discussed shortly. In nonprobabilistic sample selection, the auditor selects sample items using nonprobabilistic methods that approximate a random sampling approach. Auditors can use one of several nonprobabilistic sample selection methods.

Applying Statistical and Nonstatistical Sampling in Practice and Sample Selection Methods

Auditing standards permit auditors to use either statistical or nonstatistical sampling methods. However, it is essential that

either method be applied with due care. All steps of the process must be followed carefully. When statistical sampling is used, the sample must be a probabilistic one and appropriate statistical evaluation methods must be used with the sample results to make the sampling risk computations. Auditors may make nonstatistical evaluations when using probabilistic selection, but it is never acceptable to evaluate a nonprobabilistic sample using statistical methods. Probabilistic sample selection methods include the following:

1. Simple random sample selection
2. Systematic sample selection
3. Probability proportional to size sample selection

Nonprobabilistic sample selection methods include:

1. Haphazard sample selection
2. Block sample selection

We will now discuss each of these sample selection methods, starting with probabilistic methods. Auditors often use probabilistic methods even when using nonstatistical sampling

PROBABILISTIC SAMPLE SELECTION METHODS

Statistical sampling requires a probabilistic sample to measure sampling risk. For probabilistic samples, the auditor

uses no judgment about which sample items are selected, except in choosing which of the four selection methods to use.

In a **simple random sample**, every possible combination of population items has an equal chance of being included in the sample. Auditors use simple random sampling to sample populations when there is no need to emphasize one or more types of population items. Say, for example, auditors want to sample a client's cash disbursements for the year. They might select a simple random sample of 60 items from the cash disbursements journal, apply appropriate auditing procedures to the 60 items selected, and draw conclusions about all recorded cash disbursement transactions.

When auditors obtain a simple random sample, they must use a method that ensures all items in the population have an equal chance of selection. Suppose an auditor decides to select a sample from a total of 12,000 cash disbursement transactions for the year. A simple random sample of one transaction will be such that each of the 12,000 transactions has an equal chance of being selected. The auditor will select one random number between 1 and 12,000. Assume that number is 3,895. The auditor will select and test only the

3,895th cash disbursement transaction. For a random sample of 100, each population item also has an equal chance of being selected.

Auditors most often generate random numbers by using one of three computer sample selection techniques: electronic spreadsheets, random number generators, and generalized audit software.

In **systematic sample selection** (also called systematic sampling), the auditor calculates an interval and then selects the items for the sample based on the size of the interval. The interval is determined by dividing the population size by the desired sample size. In a population of sales invoices ranging from 652 to 3,151, with a desired sample size of 125, the interval is 20 [(3,151 – 651)/125]. The auditor first selects a random number between 0 and 19 (the interval size) to determine the starting point for the sample. If the randomly selected number is 9, the first item in the sample will be invoice number 661 (652 + 9). The remaining 124 items will be 681 (661 + 20), 701 (681 + 20), and so on through item 3,141.

The advantage of systematic selection is its ease of use. In most populations, a systematic sample can be drawn quickly

and the approach automatically puts the numbers in sequence, making it easy to develop the appropriate documentation.

A concern with systematic selection is the possibility of bias. Because of the way systematic selection is done, once the first item in the sample is selected, all other items are chosen automatically. This causes no problem if the characteristic of interest, such as a possible control deviation, is distributed randomly throughout the population, but this may not always be the case. For example, if a control deviation occurred at a certain time of the month or only with certain types of documents, a systematic sample can have a higher likelihood of failing to be representative than a simple random sample. Therefore, when auditors use systematic selection, they must consider possible patterns in the population data that can cause sample bias.

Probability Proportional to Size and Stratified Sample Selection

In many auditing situations, it is advantageous to select samples that emphasize population items with larger recorded amounts. There are two ways to obtain such samples:

1. Take a sample in which the probability of selecting any individual population item is proportional to its recorded amount. This method is called sampling with probability proportional to size (PPS), and it is evaluated using non-statistical sampling or monetary unit statistical sampling.

2. Divide the population into subpopulations, usually by dollar size, and take larger samples from the subpopulations with larger sizes. This is called stratified sampling, and it is evaluated using nonstatistical sampling or variables statistical sampling.

NONPROBABILISTIC SAMPLE SELECTION METHODS

Nonprobabilistic sample selection methods are those that do not meet the technical requirements for probabilistic sample selection. Because these methods are not based on mathematical probabilities, the representativeness of the sample may be difficult to determine.

Haphazard sample selection is the selection of items without any conscious bias by the auditor. In such cases, the auditor selects population items without regard to their size, source, or other distinguishing characteristics.

The most serious shortcoming of haphazard sample selection is the difficulty of remaining completely unbiased in the selection. Because of the auditor's training and unintentional bias, certain population items are more likely than others to be included in the sample.

In **block sample selection** auditors select the first item in a block, and the remainder of the block is chosen in sequence. For example, assume the block sample will be a sequence of 100 sales transactions from the sales journal for the third week of March. Auditors can select the total sample of 100 by taking 5 blocks of 20 items, 10 blocks of 10, 50 blocks of 2, or one block of 100.

It is ordinarily acceptable to use block samples only if a reasonable number of blocks is used. If few blocks are used, the probability of obtaining a nonrepresentative sample is too great, considering the possibility of employee turnover, changes in the accounting system, and the seasonal nature of many businesses. For example, in the previous example, sampling 10 blocks of 10 from the third week of March is far less appropriate than selecting 10 blocks of 10 from 10 different months.

Although haphazard and block sample selection appear to be less logical than other sample selection methods, they are often useful in situations where the cost of more complex sample selection methods outweighs the benefits obtained from using these approaches. For example, assume that the auditor wants to trace credits from the accounts receivable master files to the cash receipts journal and other authorized sources as a test for fictitious credits in the master files. In this situation, many auditors use a haphazard or block approach, because it is simpler and much less costly than other selection methods. However, for many nonstatistical sampling applications involving tests of controls and substantive tests of transactions, auditors prefer to use a probabilistic sample selection method to increase the likelihood of selecting a representative sample.

SAMPLING FOR EXCEPTION RATES

Auditors use sampling for tests of controls and substantive tests of transactions to determine whether controls are operating effectively and whether the rate of monetary errors is below tolerable limits. To do this, auditors estimate the percent of items in a population containing a characteristic or attribute of interest. This percent is called the occurrence

rate or exception rate. For example, if an auditor determines that the exception rate for the internal verification of sales invoices is approximately 3 percent, then on average 3 of every 100 invoices are not properly verified**.**

Auditors are interested in the following types of exceptions in populations of accounting data:

1. Deviations from the client's established controls
2. Monetary misstatements in populations of transaction data
3. Monetary misstatements in populations of account balance details

Knowing the exception rate is particularly helpful for the first two types of exceptions, which involve transactions. Therefore, auditors make extensive use of audit sampling that measures the exception rate in doing tests of controls and substantive tests of transactions. With the third type of exception, auditors usually need to estimate the total dollar amount of the exceptions because they must decide whether the misstatements are material. When auditors want to know the total amount of a misstatement, they use methods that measure dollars, not the exception rate.

The exception rate in a sample is used to estimate the exception rate in the entire population, meaning it is the auditor's "best estimate" of the population exception rate. The term exception should be understood to refer to both deviations from the client's control procedures and amounts that are not monetarily correct, whether because of an unintentional accounting error or any other cause. The term deviation refers specifically to a departure from prescribed controls.

Because the exception rate is based on a sample, there is a significant likelihood that the sample exception rate differs from the actual population exception rate. This difference is called the sampling error. The auditor is concerned with both the estimate of the sampling error and the reliability of that estimate, called sampling risk. Assume the auditor determines a 3 percent sample exception rate, and a sampling error of 1 percent, with a sampling risk of 10 percent. The auditor can state that the interval estimate of the population exception rate is between 2 percent and 4 percent (3 percent ± 1) with a 10 percent risk of being wrong (and a 90 percent chance of being right). In using audit sampling for exception rates, the auditor wants to know the most the exception rate

is likely to be, rather than the width of the confidence interval. So, the auditor focuses on the upper limit of the interval estimate, which is called the estimated or computed upper exception rate (CUER) in tests of controls and substantive tests of transactions. Using figures from the preceding example, an auditor might conclude that the CUER for missing shipping documents is 4 percent at a 5 percent sampling risk, meaning the auditor concludes that the exception rate in the population is no greater than 4 percent with a 5 percent risk of the exception rate exceeding 4 percent. Once it is calculated, the auditor can consider CUER in the context of specific audit objectives. If testing for missing shipping documents, for example, the auditor must determine whether a 4 percent exception rate indicates an acceptable control risk for the occurrence objective.

APPLICATION OF NONSTATISTICAL AUDIT SAMPLING

We will now examine the application of nonstatistical audit sampling in testing transactions for control deviations and monetary misstatements. Before doing so, key terminology are defined and summarized the following Table the same terminology is used for statistical sampling.

Terms Used in Audit Sampling	
TERM	**DEFINITION**
Terms Related to Planning	
Characteristic or attribute	The characteristic being tested in the application
Acceptable risk of overreliance (ARO)	The risk that the auditor is willing to take of accepting a control as effective or a rate of monetary misstatements as tolerable, when the true population exception rate is greater than the tolerable exception rate
Tolerable exception rate (TER)	Exception rate that the auditor will permit in the population and still be willing to conclude the control is operating effectively and/or the amount of monetary misstatements in the transactions established during planning is acceptable
Estimated population exception rate (EPER)	Exception rate that the auditor expects to find in the population before testing begins
Initial sample size	Sample size decided after considering the above factors in planning
Terms Related to Evaluating Results	
Exception	Exception from the attribute in a sample item
Sample exception rate (SER)	Number of exceptions in the sample divided by the sample size
Computed upper exception rate (CUER)	The highest estimated exception rate in the population at a given ARO

The auditor first determines whether to apply nonstatistical sampling to those attributes where sampling applies. As previously discussed, there are three phases when sampling for tests of controls and substantive tests of transactions. The auditor must (1) plan the sample; (2) select the sample and perform the audit procedures; and (3) evaluate the results to conclude on the acceptability of the population. These three phases involve 14 well-defined steps. Auditors should follow these steps carefully to ensure proper application of both the auditing and sampling requirements. We use the example audit of Hillsburg Hardware Co. to illustrate the steps in the following discussion.

Plan the Sample

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.
6. Specify the tolerable exception rate.
7. Specify acceptable risk of overreliance.
8. Estimate the population exception rate.
9. Determine the initial sample size.

Select the Sample and Perform the Audit Procedures

10. Select the sample.
11. Perform the audit procedures.

Evaluate the Results

12. Generalize from the sample to the population.
13. Analyze exceptions.
14. Decide the acceptability of the population.

1-State the Objectives of the Audit Test

The objectives of the test must be stated in terms of the transaction cycle being tested. Typically, auditors define the objectives of tests of controls and substantive tests of transactions:

- Test the operating effectiveness of controls
- Determine whether the transactions contain monetary misstatements

The objectives of these tests in the sales and collection cycle are usually to test the effectiveness of internal controls over sales and cash receipts and to determine whether sales and cash receipts transactions contain monetary misstatements. Auditors normally define these objectives as a part of designing the audit program.

2-Decide Whether Audit Sampling Applies

Audit sampling applies whenever the auditor plans to reach conclusions about a population based on a sample. The auditor should examine the audit program and select those audit procedures where audit sampling applies. To illustrate, assume the following partial audit program:

1. Review sales transactions for large and unusual amounts (analytical procedure).
2. Observe whether the duties of the accounts receivable clerk are separate from handling cash (test of control).
3. Examine a sample of duplicate sales invoices for

a. credit approval by the credit manager (test of control).

b. existence of an attached shipping document (test of control).

c. inclusion of a chart of accounts number (test of control).

4. Select a sample of shipping documents and trace each to related duplicate sales invoices (test of control).
5. Compare the quantity on each duplicate sales invoice with the quantity on related shipping documents (substantive test of transactions).

Audit sampling does not apply for the first two procedures in this audit program. The first is an analytical procedure for which sampling is inappropriate. The second is an observation procedure for which no documentation exists to perform audit sampling. Audit sampling can be used for the remaining three procedures. Audit sampling generally applies to manual controls. Automated controls can be tested using the computer assisted auditing techniques.

3-Define Attributes and Exception Conditions

When audit sampling is used, auditors must carefully define the characteristics (attributes) being tested and the exception conditions. Unless they carefully define each attribute in advance, the staff person who performs the audit procedures will have no guidelines to identify exceptions.

Attributes of interest and exception conditions for audit sampling are taken directly from the auditor's audit procedures. Table 3 shows nine attributes of interest and exception conditions taken from audit procedures 12 through 14 in the audit of Hillsburg's billing function. Samples of sales invoices will be used to verify these attributes. The absence of the attribute for any sample item will be an exception for that attribute. Both missing documents and

immaterial misstatements result in exceptions unless the auditor specifically states otherwise in the exception conditions.

4- Define the Population

The population is those items about which the auditor wishes to generalize. Auditors can define the population to include any items they want, but when they select the sample, it must be selected from the entire population as it has been defined. The auditor should test the population for completeness and detail tie-in before a sample is selected to ensure that all population items are subjected to sample selection.

The auditor may generalize only about that population that has been sampled. For example, when performing tests of controls and substantive tests of sales transactions, the auditor generally defines the population as all recorded sales invoices for the year. If the auditor samples from only one month's transactions, it is invalid to draw conclusions about the invoices for the entire year.

The auditor must carefully define the population in advance, consistent with the objectives of the audit tests. In some cases, it may be necessary to define separate populations for different audit procedures. For example, in the audit of the

sales and collection cycle for Hillsburg Hardware Co., the direction of testing in audit procedures 12 through 14 (in Table 2) proceeds from sales invoices in the sales journal to source documentation. In contrast, the direction of testing for audit procedures 10 and 11 proceeds from the shipping documents to the sales journal. Thus, the auditor defines two populations — a population of sales invoices in the sales journal and a population of shipping documents.

5-Define the Sampling Unit

The sampling unit is defined by the auditor based on the definition of the population and objective of the audit test. The sampling unit is the physical unit that corresponds to the random numbers the auditor generates. It is often helpful to think of the sampling unit as the starting point for doing the audit tests. For the sales and collection cycle, the sampling unit is typically a sales invoice or shipping document number. For example, if the auditor wants to test the occurrence of sales, the appropriate sampling unit is sales invoices recorded in the sales journal. If the objective is to determine whether the quantity of the goods described on the customer's order is accurately shipped and billed, the auditor can define the sampling unit as the customer's order, the

shipping document, or the duplicate sales invoice, because the direction of the audit test doesn't matter for this audit procedure.

6-Specify the Tolerable Exception Rate

Establishing the tolerable exception rate (TER) for each attribute requires an auditor's professional judgment. TER represents the highest exception rate the auditor will permit in the control being tested and still be willing to conclude the control is operating effectively (and/or the rate of monetary misstatements in the transactions is acceptable). For example, assume that the auditor decides that TER for attribute 8(Credit is approved) is 9 percent. That means that the auditor has decided that even if 9 percent of the duplicate sales invoices are not approved for credit, the credit approval control is still effective in terms of the assessed control risk included in the audit plan.

When determining TER, the auditor considers the degree of reliance to be placed on the control and the significance of the control to the audit. If only one internal control is used to support a low control risk assessment for an objective, TER will be lower for the attribute than if multiple controls are used to support a low control risk assessment for the same

objective. Control deviations increase the risk of material misstatements in the accounting records, but do not necessarily result in misstatements. For example, a disbursement that does not have evidence of proper approval may have been properly authorized and recorded. For this reason, the tolerable rate of deviation for tests of controls is normally higher than the comparable tolerable rate of exception for monetary misstatements.

TER can have a significant impact on sample size. A larger sample size is needed for a low TER than for a high TER. For example, a larger sample size is needed for the test of credit approval (attribute 8) if the TER is decreased from 9 percent to 6 percent. Since a lower TER is used for significant account balances, the auditor requires a larger sample size to gather sufficient evidence about the effectiveness of the control or absence of monetary misstatements.

7-Specify Acceptable Risk of Overreliance

Whenever auditors take a sample, they risk making incorrect conclusions about the population. The risk that the auditor concludes that controls are more effective than they actually are is the risk of overreliance. The risk of underreliance is the

risk that the auditor will erroneously conclude that the controls are less effective than they actually are. Underreliance affects the efficiency of the audit. The incorrect conclusion that a control is ineffective may lead to an unnecessary increase in assessed control risk and substantive tests. In contrast, overreliance on a control impacts the effectiveness of the audit, because reliance on an ineffective control leads to an inappropriate reduction in substantive tests.

Auditors are normally more concerned with the risk of overreliance because it impacts the effectiveness of the audit. The acceptable risk of overreliance (ARO) measures the risk the auditor is willing to take of accepting a control as effective (or a rate of misstatements as tolerable) when the true population exception rate is greater than TER.

ARO represents the auditor's measure of sampling risk. Assume that TER is 6 percent, ARO is high, and the true population exception rate is 8 percent. The control in this case is not acceptable because the true exception rate of 8 percent exceeds TER. The auditor, of course, does not know the true population exception rate. The ARO of high means that the auditor is willing to take a fairly substantial risk of

concluding that the control is effective after all testing is completed, even when it is ineffective. If the control were found to be effective in this illustration, the auditor would have overrelied on the system of internal control (used a lower assessed control risk than was justified).

In choosing the appropriate ARO for each attribute, auditors must use their best judgment. Their main consideration is the extent to which they plan to reduce assessed control risk as a basis for the extent of tests of details of balances. Auditors normally assess ARO at a lower level when auditing an accelerated filer public company because the auditor needs greater assurance that the internal controls are effective to support the opinion on internal control over financial reporting. In audits of non-accelerated filers and private companies, the appropriate ARO and extent of tests of controls depend on assessed control risk. For audits where there is extensive reliance on internal control, control risk will be assessed at low and therefore ARO will also be as low. Conversely, if the auditor plans to rely on internal controls only to a limited extent, control risk will be assessed as high and so will ARO.

For nonstatistical sampling, it is common for auditors to use ARO of high, medium, or low instead of a percentage. For statistical sampling it is common for auditors to use a percent, such as 5% or 10%. A low ARO implies that the tests of controls are important and will correspond to a low assessed control risk and reduced substantive tests of details of balances. As summarized in Figure 2 , ARO for the audit of the billing function at Hillsburg Hardware Co. is assessed as low for all attributes, because it is an accelerated filer public company and the auditor's tests of controls must provide a basis for the opinion on internal control over financial reporting. As a result, the auditor requires a low risk of overrelying on controls. Stated another way, the auditor needs greater assurance and therefore a larger sample size to support the lower risk of overreliance.

Figure 2

Sampling Data Sheet: Tests of Hillsburg Hardware Co.'s Billing Function
Client: Hillsburg Hardware
Audit Area: Tests of Controls and Substantive Tests of Transactions—Billing Function
Year-end: 12/31/13 Pop. size: 5,764
Define the objective(s): Examine duplicate sales invoices and related documents to determine whether the system has functioned as intended and as described in the audit program.

Define the population precisely (including stratification, if any): Sales invoices for the period 1/1/13 to 10/31/13. First invoice number = 3689. Last invoice number = 9452.

Define the sampling unit, organization of population items, and random selection procedures:

Sales invoice number, recorded in the sales journal sequentially; computer generation of random numbers.

Description of Attributes	Planned Audit				Actual Results			
	EPER	TER	ARO	Initial sample size	Sample size	Number of exceptions	Sample exception rate	Calculated Sampling Error (TER - SER)
1. Existence of the sales invoice number in the sales journal (procedure 12).	0	4	Low	75				
2. Amount and other data in the master file agree with sales journal entry (procedure 13a).	1	5	Low	100				
3. Amount and other data on the duplicate sales invoice agree with the sales journal entry (procedure 13b).	1	5	Low	100				
4. Evidence that pricing, extensions, and footings are checked (initials and correct amounts) (procedure 13b).	1	5	Low	100				
5. Quantity and other data on the bill of lading agree with the duplicate sales invoice and sales journal (procedure 13c).	1	5	Low	100				
6. Quantity and other data on the sales order agree with the duplicate sales invoice (procedure 13d).	1	7	Low	65				
7. Quantity and other data on the customer order agree with the duplicate sales invoice (procedure 13e).	1.5	9	Low	50				
8. Credit is approved (procedure 13e).	1.5	9	Low	50				
9. For recorded sales in the sales journal, the file of supporting documents includes a duplicate sales invoice, bill of lading, sales order, and customer order (procedure 14).	1	7	Low	65				

Intended use of sampling results:

1. Effect on Audit Plan:
2. Recommendations to Management:

Like for TER, there is an inverse relationship between ARO and planned sample size. If the auditor reduces ARO from high to low, planned sample size must be increased. ARO

represents the auditor's risk of incorrectly accepting the control as effective, and a larger sample size is required to lower this risk.

The auditor can establish different TER and ARO levels for different attributes of an audit test, depending on the importance of the attribute and related control. For example, auditors commonly use higher TER and ARO levels for tests of credit approval than for tests of the occurrence of duplicate sales invoices and bills of lading. This makes sense because the exceptions for the latter are likely to have a more direct impact on the correctness of the financial statements than the former.

TABLE 4 **Guidelines for ARO and TER for Nonstatistical Sampling: Tests of Controls**

Planned Reduction in Substantive Tests of Details of Balances	**Judgment**	**Guideline**
Assessed control risk. Consider: Need to issue a separate report on internal control over financial reporting for accelerated filer public companies Nature, extent, and timing of substantive tests (extensive planned substantive tests relate to higher assessed control risk and vice versa) Quality of evidence available for tests of controls (a lower quality of evidence available results in a higher assessed control risk and	• Lowest assessed control risk • Moderate assessed control risk • Higher assessed control risk • 100% assessed control risk	• ARO of low • ARO of medium • ARO of high • ARO is not applicable
Significance of the transactions and related account balances that the internal controls are intended to affect	• Highly significant balances • Significant balances • Less significant balances	• TER of 4% • TER of 5% • TER of 6%

TABLE 5	Guidelines for ARO and TER for Nonstatistical Sampling:		Substantive Tests of Transactions
Planned Reduction in Substantive Tests of Details of Balances	**Results of Understanding Internal Control and Tests of Controls**	**ARO for Substantive Tests of Transactions**	**TER for Substantive Tests of Transactions**
Large	Excellent[1] Good Not good	High Medium Low	Percent or amount based on materiality considerations for related accounts
Moderate	Excellent[1] Good Not good	High Medium Medium-low	Percent or amount based on materiality considerations for related accounts
Small[2]	Excellent[1] Good Not good	High Medium-high Medium	Percent or amount based on materiality considerations for related accounts

8- Estimate the Population Exception Rate

Auditors should make an advance estimate of the population exception rate to plan the appropriate sample size. If the estimated population exception rate (EPER) is low, a relatively small sample size will satisfy the auditor's tolerable exception rate, because a less precise estimate is required.

Auditors often use the preceding year's audit results to estimate EPER. If prior-year results are not available, or if they are considered unreliable, the auditor can take a small preliminary sample of the current year's population for this purpose. It is not critical that the estimate be precise because the current year's sample exception rate is ultimately used to

estimate the population characteristics. If a preliminary sample is used, it can be included in the total sample, as long as appropriate sample selection procedures are followed. In the Hillsburg Hardware Co. audit, the estimated population exception rates for the attributes in Figure 2 are based on the previous year's results, modified slightly to account for the change in personnel.

9- Determine the Initial Sample Size

Four factors determine the initial sample size for audit sampling: population size, TER, ARO, and EPER. Population size is not a significant factor and typically can be ignored, especially for large populations. Auditors using nonstatistical sampling decide the sample size using professional judgment rather than using a statistical formula. Once the three major factors affecting sample size have been determined, the auditor can decide an initial sample size. It is called an initial sample size because the exceptions in the actual sample must be evaluated before auditors can decide whether the sample is sufficiently large to achieve the objectives of the tests.

Sensitivity of Sample Size to a Change in the Factors To understand the concepts underlying sampling in auditing, you

need to understand the effect of increasing or decreasing any of the four factors that determine sample size, while the other factors are held constant. Table 6 shows the effect on sample size of independently increasing each factor. The opposite effect will occur for decreasing each factor.

A combination of two factors has the greatest effect on sample size: TER minus EPER. The difference between the two factors is the precision of the initial sample estimate. A smaller precision, which is called a more precise estimate, requires a larger sample. At one extreme, assume TER is 4% and EPER is 3%. In this case, precision is 1%, which will result in a large sample size. Now assume TER is 8% and EPER is zero for an 8% precision. In this case the sample size can be small and still give the auditor confidence that the actual exception rate is less than 8%, assuming no exceptions are found when auditing the sample.

Figure 2 summarizes the different sample sizes selected for testing attributes 1 through 9 for the Hillsburg audit. The largest sample (a size of 100) is selected for tests of attributes 2 through 5, because of the degree of precision required. For those attributes, the difference between TER and EPER is smallest, thus requiring a larger sample size than attributes 6

through 9. Although the difference between TER and EPER for attribute 1 is the same as that for attributes 2 through 5, the estimated population exception rate of zero justifies a smaller sample of 75 items.

TABLE 6 Effect on Sample Size of Changing Factors

Type of Change	Effect on Initial Sample Size
Increase acceptable risk of overreliance	Decrease
Increase tolerable exception rate	Decrease
Increase estimated population exception rate	Increase
Increase population size	Increase (minor effect)

10- Select the Sample

After auditors determine the initial sample size for the audit sampling application, they must choose the items in the population to include in the sample. Auditors can choose the sample using any of the probabilistic or nonprobabilistic methods we discussed earlier in this chapter. To minimize the possibility of the client altering the sample items, the auditor should not inform the client too far in advance of the sample items selected. The auditor should also control the sample after the client provides the documents. Several additional sample items may be selected as extras to replace any voided items in the original sample.

The random selection for the Hillsburg audit procedures is straightforward except for the different sample sizes needed for different attributes. To overcome this problem, auditors can select a random sample of 50 for use on all nine attributes, followed by another sample of 15 for all attributes except attributes 7 and 8, an additional 10 for attributes 1 through 5, and 25 more for attributes 2 through 5.

Figure 1 illustrates the selection of the first 50 sample items for Hillsburg Hardware using computer generation of random numbers.

11- Perform the Audit Procedures

The auditor performs the audit procedures by examining each item in the sample to determine whether it is consistent with the definition of the attribute and by maintaining a record of all the exceptions found. When audit procedures have been completed for a sampling application, the auditor will have a sample size and number of exceptions for each attribute.

To document the tests and provide information for review, auditors commonly include a schedule of the results. Some auditors prefer to include a schedule listing all items in the sample; others prefer to limit the documentation to

identifying the exceptions. This latter approach is followed in Figure 3.

12- Generalize from the Sample to the Population

The sample exception rate (SER) can be easily calculated from the actual sample results. SER equals the actual number of exceptions divided by the actual sample size. Figure 3 summarizes the exceptions found for tests of attributes 1 through 9. In this example, the auditor found zero exceptions for attribute 1 and two exceptions for attribute 2, making the SER 0 percent (0 ÷ 75) for attribute 1, and 2 percent for attribute 2 (2 ÷100).

When evaluating a sample for tests of controls and substantive tests of transactions, the auditor should evaluate sampling risk. When nonstatistical sampling is used, sampling risk cannot be directly measured. One way to evaluate sampling risk is to subtract the sample exception rate from the tolerable exception rate to find the calculated sampling error (TER – SER), and evaluate whether it is sufficiently large to conclude that the true population exception rate is acceptable. For example, if an auditor takes a sample of 100 items for an attribute and finds no exceptions (SER = 0) and TER is 5 percent, calculated sampling error is

5 percent (TER of 5 percent – SER of 0 = 5 percent). If the auditors had found four exceptions, calculated sampling error would have been 1 percent (TER of 5 percent – SER of 4 percent). It is much more likely that the true population exception rate is less than or equal to the tolerable exception rate in the first case than in the second one. Therefore, most auditors would probably find the population acceptable based on the first sample result and not acceptable based on the second.

When SER exceeds the EPER used in designing the sample, auditors usually conclude that the sample results do not support the preliminary assessed control risk. In that case, auditors are likely to conclude that there is an unacceptably high risk that the true deviation rate in the population exceeds TER.

The auditor's consideration of whether sampling error is sufficiently large also depends on the sample size used. If the sample size in the previous example had been only 20 items, the auditor would have been much less confident that finding no exceptions was an indication that the true population exception rate does not exceed TER.

The SER and the calculated sampling error (TER – SER) for Hillsburg Hardware are summarized in Figure 4.

13- Analyze Exceptions

In addition to determining SER for each attribute and evaluating whether the true (but unknown) exception rate is likely to exceed the tolerable exception rate, auditors must analyze individual exceptions to determine the breakdown in the internal controls that allowed them to happen. Exceptions can be caused by many factors, such as careless ness of employees, misunderstood instructions, or intentional failure to perform procedures. The nature of an exception and its causes have a significant effect on the qualitative evaluation of the system. For example, if all the exceptions in the tests of internal verification of sales invoices occurred while the person normally responsible for performing the tests was on vacation, this would affect the auditor's evaluation of the internal controls and the subsequent investigation differently than if the exceptions arose from the incompetence of the regular employee. The exception analysis is illustrated for Hillsburg in Figure 5.

14-Decide the Acceptability of the Population

When generalizing from the sample to the population, most auditors using non-statistical sampling subtract SER from TER and evaluate whether the difference (calculated sampling error) is sufficiently large. If the auditor concludes the difference is sufficiently large, the control being tested can be used to reduce assessed control risk as planned, assuming a careful analysis of the exceptions does not indicate the possibility of other significant problems with internal controls.

As Figure 4 illustrates, SER exceeds TER for attributes 4 and 8. Although SER is less than TER for attributes 2 and 5, the auditor concluded that the calculated allowance for sampling error is too small and the results of these tests are therefore also unacceptable.

When the auditor determines that TER – SER is too small to conclude that the population is acceptable, or when SER exceeds TER, the auditor must follow one of four courses of action:

Revise TER or ARO This alternative should be followed only when the auditor has concluded that the original specifications were too conservative. Relaxing either TER or

ARO may be difficult to defend if the auditor is ever subject to review by a court or a commission. Auditors should change these requirements only after careful consideration.

Expand the Sample Size An increase in the sample size has the effect of decreasing the sampling error if the actual sample exception rate does not increase. Of course, SER may also increase or decrease if additional items are selected. Increasing the sample size is appropriate if the auditor believes the initial sample was not representative, or if it is important to obtain evidence that the control is operating effectively. This is likely if the auditor is reporting on internal control, or if the control relates to highly significant account balances such as receivables or inventory.

Revise Assessed Control Risk If the results of the tests of controls and substantive tests of transactions do not support the preliminary assessed control risk, the auditor should revise assessed control risk upward. This will likely result in the auditor increasing substantive tests of transactions and tests of details of balances. For example, if tests of controls of internal verification procedures for verifying prices, extensions, and quantities on sales invoices indicate that those procedures are not being followed, the auditor should

increase substantive tests of transactions for the accuracy of sales. If the substantive tests of transactions results are unacceptable, the auditor must increase tests of details of balances for accounts receivable.

The auditor should decide whether to increase sample size or to revise assessed control risk on the basis of cost versus benefit. If the sample is not expanded, the auditor must revise assessed control risk upward and therefore perform additional substantive tests. The cost of additional tests of controls must be compared with that of additional substantive tests. If an expanded sample continues to produce unacceptable results, additional substantive tests will still be necessary.

For accelerated filer public companies, the auditor must evaluate the control deficiencies to deter mine their effect on the auditor's report on internal control. If the deficiencies constitute a material weakness but are corrected before year-end, the auditor may be able to test management's corrected controls. The auditor may also be able to identify additional compensating controls. If the auditor is unable to test corrected controls or identify compensating controls and the

deficiencies are deemed to be material weaknesses, the audit report on internal control must be an adverse opinion.

Communicate with the Audit Committee or Management

Communication is desirable, in combination with one of the other three actions just described, regardless of the nature of the exceptions. When the auditor determines that the internal controls are not operating effectively, management should be informed in a timely manner. If the tests were performed prior to year-end, this may allow management to correct the deficiency before year-end. The auditor is required to communicate in writing to those charged with governance, such as the audit committee, regarding significant deficiencies and material weaknesses in internal control.

As Figure 4 illustrates, in the Hillsburg audit, SER exceed TER for two attributes (4 and 8). Because the sales transactions tested at Hillsburg represented transactions recorded only through October 31, 2013, timely communication of these deficiencies may allow Hillsburg management to correct the noted deficiencies in time for the auditor to test the corrected controls before year-end for purposes of auditing internal control over financial reporting.

In Figure 5, the last column summarizes the follow-up actions the auditor plans to do regardless of whether the control deficiencies were corrected.

Because the difference between SER and TER was small for attributes 2 and 5, Figure 5 includes follow-up actions in the financial statement audit for those attributes. No follow-up actions are required to address the exception noted for attribute 6, given the large difference between SER and TER. The conclusions reached about each attribute are also documented at the bottom of Figure 4.

Figure 4.

Sampling Data Sheet: Tests of Hillsburg Hardware Co.'s Billing Function
Client: Hillsburg Hardware Year-end: 12/31/13
Audit Area: Tests of Controls and Substantive Tests of Transactions- Pop. size: 5,764
Billing Function
Define the objective(s): Examine duplicate sales invoices and related documents to determine whether the system has functioned as intended and as described in the audit program.
Define the population precisely (including stratification, if any): Sales invoices for the period 1/1/13 to 10/31/13. First invoice number = 3689. Last invoice number = 9452.
Define the sampling unit, organization of population items, and random selection procedures:
Sales invoice number, recorded in the sales journal sequentially; computer generation of random numbers

Description of Attributes	Planned Audit				Actual Results			
	EPER	TER	ARO	Initial sample	Sample size	Number of exceptions	Sample exception	Calculated Sampling Error (TER
1. Existence of the sales invoice number in the sales	0	4	Low	75	75	0	0	4.0
2. Amount and other data in the master file agree with sales journal entry (procedure	1	5	Low	100	100	2	2	3.0
3. Amount and other data on the duplicate sales invoice agree with the sales journal	1	5	Low	100	100	0	0	5.0
4. Evidence that pricing, extensions, and footings are checked (initials and correct	1	5	Low	100	100	10	10	SER exceed s
5. Quantity and other data on the bill of lading agree with the duplicate sales invoice and sales	1	5	Low	100	100	4	4	1.0
6. Quantity and other data on the sales order agree with the duplicate sales invoice	1	7	Low	65	65	1	1.5	5.5
7. Quantity and other data on the customer order agree with the duplicate sales invoice	1.5	9	Low	50	50	0	0	9.0
8. Credit is approved	1.5	9	Low	50	50	10	20	SER exceed
9. For recorded sales in the sales journal, the file of supporting documents includes a duplicate sales	1	7	Low	65	65	0	0	7.0

Intended use of sampling results:

1. Effect on Audit Plan: Controls tested through attributes 1, 3, 6, 7, and 9 can be viewed as operating effectively given the size of the allowance for sampling error (e.g., TER – SER). Additional emphasis is needed in confirmation, allowance for uncollectible accounts, cutoff tests, and price tests for the financial statement audit due to results of tests for attributes 2, 4, 5, and 8.

2. Effect on Report on Internal Control: The allowance for sampling error is too small or SER exceeds TER for attributes 2, 4, 5, and 8. These findings have been communicated to management to allow an opportunity for correction of the control deficiency to be made before year-end. If timely correction is made by management, the corrected controls will be tested before year-end for purposes of reporting on internal control over financial reporting.

3. Recommendations to Management: Each of the exceptions should be discussed with management. Specific recommendations are needed to correct the internal verification of sales invoices and to improve the approach to credit approvals.

Figure 5

Analysis of Exceptions

CLIENT: Hillsburg Hardware
ANALYSIS OF EXCEPTIONS Prepared by: _M_S_W___
YEAR-END: December 31, 2013 Date: 1_1_/1_5_/_1_3

Attribute	Number of exceptions	Nature of exceptions	Effect on the financial statement audit and other comments*
2	2	Both errors were posted to the wrong account and were still outstanding after several months. The amounts were for $2,500 and $7,900.	Because the allowance for sampling error is small (e.g., TER - SER), additional substantive work is needed. Perform expanded confirmation procedures and review older uncollected balances thoroughly.
4	10	—In six cases there were no initials for internal verification. -In two cases the wrong price was used but the errors were under $200 in each case. —In one case there was a pricing error of $5,000. -In one case freight was not charged. (Three of the last four exceptions had initials for internal verification.)	As a result, have independent client personnel recheck a random sample of 500 duplicate sales invoices under our control. Also, expand the confirmation of accounts receivable.
5	4	In each case the date on the duplicate sales invoice was several days later than the shipping date.	Do extensive tests of the sales cutoff by comparing recorded sales with the shipping documents.
6	1	Just 106 items were shipped and billed though the sales order was for 112 items. The reason for the difference was an error in the perpetual inventory master file. The perpetuals indicated that 112 items were on hand, when there were actually 106. The system does not backorder for undershipments smaller than 25%.	No expansion of tests of controls or substantive tests. The system appears to be working effectively.
8	10	Credit was not approved.	Expand the year-end procedures

		Four of these were for new customers. Discussed with Chulick, who stated his busy schedule did not permit approving all sales.	extensively in evaluating allowance for uncollectible accounts. This includes scheduling of cash receipts subsequent to year-end for all outstanding accounts receivable to determine collectibility at year-end.

*This column documents conclusions about implications for the financial statement audit. The control deficiencies have been communicated to management to allow an opportunity for correction of the deficiency before year-end. If timely correction is made by management, the corrected controls will be tested before year-end for purposes of reporting on internal control over financial reporting.

Adequate Documentation

The auditor needs to retain adequate records of the procedures performed, the methods used to select the sample and perform the tests, the results found in the tests, and the conclusions reached. Documentation is needed for both statistical and nonstatistical sampling to evaluate the combined results of all tests and to defend the audit if the need arises. Figures 2 through 6 illustrate the type of documentation commonly found in practice.

Figure 6 illustrates the evidence-planning worksheet used in the audit of Hillsburg Hardware to decide the tests of balances for accounts receivable. After completing tests of controls and substantive tests of transactions, the auditor should complete rows 3 through 7 of the worksheet. (You may recall that rows 1 and 2 were completed in Chapter 9.) Rows 3 through 5 document control risk for sales, cash

receipts, and additional controls. The control risk assessments in Figure 6 are the same as the preliminary assessments in the control risk matrices for Hillsburg Hardware on pages 306 and 458, with the following modifications:

• Control risk is high for the accuracy objective for sales because of the unsatisfactory results for attribute 4 (procedure 13b).

• Control risk is high for the realizable value objective for accounts receivable based on the results for attribute 8 related to credit approval for sales transactions (procedure 13e).

• The occurrence (completeness) objective for cash receipts relates to the complete -ness (existence) objective for accounts receivable.

Finally, note in Figure 6 that all substantive tests of transactions results were satisfactory except for the accuracy and cutoff objectives for sales. Refer back to Figure 5 and you can see that:

• Substantive tests of transactions results for the accuracy objective were only fair because of exceptions found for attribute 2 (procedure 13a).

• Results were unacceptable for the cutoff objective because of unsatisfactory results for attribute 5 (procedure 13c).

All of the steps involved in nonstatistical sampling are summarized in Figure 7. Although this figure deals with nonstatistical sampling, the 14 steps in the figure also apply to statistical sampling, which is covered next.

Figure 6

Evidence-Planning Worksheet to Decide Tests of Details of Balances for Hillsburg Hardware Co. — Accounts Receivable

Acceptable audit risk	**Medium**	**Medium**	**Medium**	**Medium**	**Medium**	**Medium**	**Medium**	**Medium**
Inherent risk	**Low**	**Medium**	**Low**	**Low**	**Low**	**Medium**	**Medium**	**Low**
Control risk-Sales	**Low**	**Medium**	**Low**	**High**	**Low**	**Medium**	**High**	**Not applicable**
Control risk-Cash receipts	**Low**	**Medium**	**Low**	**Low**	**Low**	**Low**	**Not applicable**	**Not applicable**
Control risk-Additional controls	**None**	**None**	**None**	**None**	**None**	**None**	**None**	**Low**
Substantive tests of transactions-Sales	**Good results**	**Good results**	**Good results**	**Fair results**	**Good results**	**Unacceptable results**	**Not applicable**	**Not applicable**

Substantive tests of transactions- Cash receipts	Good results	Good results	Good results	Good results	Good results	Good results	Not applicable	Not applicable
Analytical procedures								
Planned detection risk for tests of details of balances								
Planned audit evidence for tests of details of balances								

Performance materiality $265,000

STATISTICAL AUDIT SAMPLING

The statistical sampling method most commonly used for tests of controls and substantive tests of transactions is attributes sampling. (When the term attributes sampling is used in this text, it refers to attributes statistical sampling. Nonstatistical sampling also has attributes, which are the characteristics being tested for in the population, but attributes sampling is a statistical method.)

The application of attributes sampling for tests of controls and substantive tests of transactions has far more similarities to nonstatistical sampling than differences. The same 14 steps are used for both approaches, and the terminology is essentially the same. The main differences are the calculation of initial sample sizes using tables developed from statistical probability distributions and the calculation of estimated

upper exception rates using tables similar to those for calculating sample sizes.

SAMPLING DISTRIBUTION

Auditors base their statistical inferences on sampling distributions. A sampling distribution is a frequency distribution of the results of all possible samples of a specified size that could be obtained from a population containing some specific characteristics. Sampling distributions allow the auditor to make probability statements about the likely representativeness of any sample that is in the distribution. Attributes sampling is based on the binomial distribution, in which each possible sample in the population has one of two possible values, such as yes/no, black/white, or control deviation/no control deviation.

Assume that in a population of sales invoices, 5 percent have no shipping documents attached as required by the client's internal controls. If the auditor takes a sample of 50 sales invoices, how many will be found that have no shipping documents? Simple multiplication would estimate 2.5 exceptions (5% of 50), but that number is impossible because there is no such thing as half an exception. In reality, the sample could contain no exceptions or even more than ten. A

binomial-based sampling distribution tells us the probability of each possible number of exceptions occurring. Table 7 illustrates the sampling distribution for the example population with a sample of 50 items from a very large population and an exception rate of 5 percent. To calculate the probability of obtaining a sample with at least one exception, subtract the probability of no exceptions occurring from 1 (100 percent). By doing so, we find the likelihood of finding a sample with at least one exception is 1 – .0769, or 92.31 percent.

Each population exception rate and sample size has a unique sampling distribution. The distribution for a sample size of 100 from a population with a 5 percent exception rate differs from the previous example, as will the distribution for a sample of 50 from a population with a 3 percent exception rate.

Of course, auditors do not take repeated samples from known populations. They take one sample from an unknown population and get a specific number of excep tions in that sample. But knowledge about sampling distributions enables auditors to make statistically valid statements about the population. If the auditor selects a sample of 50 sales

invoices to test for attached shipping documents and finds one exception, the auditor could examine the probability table in Table 7 and know there is a 20.25 percent probability that the sample came from a population with a 5 percent exception rate, and a 79.75 percent (1 – .2025) probability that the sample was taken from a population having some other exception rate. Based on the cumulative probabilities column in Table 7 , a n auditor could estimate a 27.94 percent probability that the sample came from a population with more than a 5 percent exception rate and a 72.06 percent (1 – .2794) probability that the sample was taken from a population having an exception rate of 5 percent or less. Because it is also possible to calculate the probability distributions for other population exception rates, auditors use these to draw statistical conclusions about the unknown population being sampled. These sampling distributions are the basis for the tables used by auditors for attributes sampling

TABLE 7	Probability of Each Exception Rate and	Exception Rate — 5 Percent Sample Size of 50	Population
Number of Exceptions	Percentage of Exception	Probability	Cumulative Probability
0	0	.0769	.0769
1	2	.2025	.2794
2	4	.2611	.5405
3	6	.2199	.7604
4	8	.1360	.8964
5	10	.0656	.9620
6	12	.0260	.9880
7	14	.0120	1.0000

APPLICATION OF ATTRIBUTES SAMPLING

The steps discussed for nonstatistical sampling are equally applicable to attributes sampling. In this section, we'll focus on the differences between the two sampling methods.

Plan the Sample

1. State the objectives of the audit test. Same for attributes and nonstatistical sampling.

2. Decide whether audit sampling applies. Same for attributes and nonstatistical sampling.

3. Define attributes and exception conditions. Same for attributes and nonstatis-tical sampling.

4. Define the population. Same for attributes and nonstatistical sampling.

5. Define the sampling unit. Same for attributes and nonstatistical sampling.

6. Specify the tolerable exception rate. Same for attributes and nonstatistical sampling.

7. Specify acceptable risk of overreliance. The concepts of specifying this risk are the same for both statistical and nonstatistical sampling, but the method of quantification is usually different. For nonstatistical sampling, most auditors use low, medium, or high acceptable risk, whereas auditors using attributes sampling assign a specific amount, such as 10 percent or 5 percent risk. The methods differ because auditors need to evaluate results statistically.

8. Estimate the population exception rate. Same for attributes and nonstatistical sampling.

9. Determine the initial sample size. Four factors determine the initial sample size for both statistical and nonstatistical sampling: population size, TER, ARO, and EPER. In attributes sampling, auditors determine sample size by using computer programs or tables developed from statistical formulas.

The two tables in Table 8 come from the AICPA Audit Sampling Guide. The top one shows sample sizes for a 5 percent ARO, while the bottom one is for a 10 percent ARO.

Use of the Tables When auditors use the tables to determine initial sample size, they follow these four steps:

i. Select the table corresponding to the ARO. ii. Locate the TER at the top of the table. iii. Locate the EPER in the far left column.

iv. Read down the appropriate TER column until it intersects with the appropriate EPER row. The number at the intersection is the initial sample size.

Using the Hillsburg Hardware Co. example, assume that an auditor is willing to reduce assessed control risk for the agreement between sales orders and invoices if the number of exceptions in the population (attribute 6 in Table 3) does not exceed 7 percent (TER), at a 5 percent ARO. On the basis of past experience, the auditor sets EPER at 1 percent. On the 5 percent ARO table, locate the 7 percent TER column, and read down the column until it intersects with the 1 percent EPER row. The initial sample size is 66.

Is 66 a large enough sample size for this audit? It is not possible to decide until after the tests have been performed. If

the actual exception rate in the sample turns out to be greater than 1 percent, the auditor will be unsure of the effectiveness of the control. The reasons will become apparent in the following sections.

Effect of Population Size In the preceding discussion, auditors ignored the size of the population in determining the initial sample size. Statistical theory shows that in populations where attributes sampling applies, population size is a minor consideration in determining sample size. Because most auditors use attributes sampling for reasonably large populations, the reduction of sample size for smaller populations is ignored here.

Select the Sample and Perform the Audit Procedures

10. Select the sample. The only difference in sample selection for statistical and nonstatistical sampling is the requirement that probabilistic methods must be used for statistical sampling. Either simple random or systematic sampling is used for attributes sampling.

11. Perform the audit procedures. Same for attributes and nonstatistical sampling.

Evaluate the Results

12. Generalize from the sample to the population. For attributes sampling, the
auditor calculates an upper precision limit (CUER) at a specified ARO,
again using special computer programs or tables developed from statistical
formulas. The calculations are illustrated in tables like Table 15-9 (p. 503).
These are “one-sided tables,” meaning they represent the upper exception rate for a given ARO.
Use of the Tables Use of tables to compute CUER involves four steps:
i. Select the table corresponding to the auditor’s ARO. This ARO should be the
same as the ARO used for determining the initial sample size. ii. Locate the actual number of exceptions found in the audit tests at the top of
the table. iii. Locate the actual sample size in the far left column. iv. Read down the appropriate actual number of exceptions column until it intersects with the appropriate

sample size row. The number at the intersection is the CUER.

To use the evaluation table for Hillsburg Hardware, assume an actual sample size of 70 and one exception in attribute 6. Using an ARO of 5 percent, CUER equals 6.6 percent. In other words, the CUER for attribute 6 is 6.6 percent at a 5 percent ARO. Does this mean that if 100 percent of the population were tested, the true exception rate will be 6.6 percent? No, the true exception rate remains unknown. What this result means is this: if the auditor concludes that the true exception rate does not exceed 6.6 percent, there is a 95 percent probability that the conclusion is right and a 5 percent chance that it is wrong.

It is possible to have a sample size that is not equal to those provided for in the attributes sampling evaluation tables. When this occurs, it is common for auditors to interpolate to estimate the data points that fall between those listed in the table.

These tables assume a very large (infinite) population size, which results in a more conservative CUER than for smaller populations. As with sample size, the effect of population size on CUER is typically very small, so it is ignored.

13. Analyze exceptions. Same for attributes and nonstatistical sampling.

14. Decide the acceptability of the population. The methodology for deciding the acceptability of the population is essentially the same for attributes and nonstatistical sampling. For attributes sampling, the auditor compares CUER with TER for each attribute. Before the population can be considered acceptable, the CUER determined on the basis of the actual sample results must be less than or equal to TER when both are based on the same ARO. In our example, when the auditor specified a TER of 7 percent at a 5 percent ARO and the CUER was 6.6 percent, the requirements of the sample have been met. In this case, the control being tested can be used to reduce assessed control risk as planned, provided a careful analysis of the cause of exceptions does not indicate the possibility of a significant problem in an aspect of the control not previously considered.

When the CUER is greater than the TER, it is necessary to take specific action. The four courses of action discussed for nonstatistical sampling are equally applicable to attributes sampling.

Figure 8 illustrates the sampling documentation completed for the tests of attributes 1 through 9 in Table 3 for Hillsburg Hardware Co. using attributes sampling. Notice that much of the information in Figure 8 is consistent with information presented in the nonstatistical sampling example illustrated in Figure 4 . The key differences between Figures 4 and 8 are the auditor's judgment about ARO and the initial sample size determined when planning the audit, and the calculation of CUER using the actual test results. Notice that the ARO judgment is numerical (5 percent) in the attributes sampling application (Figure 8). The numerical judgment about ARO is considered along with the assessments of EPER and TER to determine the initial sample sizes for each attribute using Table 8. The CUER in Figure 8 is determined using Table 9 based on the sample exceptions identified and the actual sample size tested.

Figure 8

Attributes Sampling Data Sheet: Tests of Hillsburg Hardware Co.'s Billing Function

Client: Hillsburg Hardware Year-end: 12/31/13

Audit Area: Tests of Controls and Substantive Tests of Transactions- Billing Function Pop. size: 5,764

Define the objective(s): Examine duplicate sales invoices and related documents to determine whether the system has functioned as intended and as described in the audit program.

Define the population precisely (including stratification, if any): Sales invoices for the period 1/1/13 to 10/31/13. First invoice number = 3689. Last invoice number = 9452.

Define the sampling unit, organization of population items, and random selection procedures:

Sales invoice number, recorded in the sales journal sequentially; computer generation of random numbers.

Description of Attributes	Planned Audit				Actual Results			
	EPER	TER	ARO	Initial sample size	Sample size	Number of exceptions	Sample exception rate	CUER
1. Existence of the sales invoice number in the sales journal (procedure 12).	0	4	5	74	75	0	0	4.0
2. Amount and other data in the master file agree with sales journal entry (procedure 13a).	1	5	5	93	100	2	2	6.2
3. Amount and other data on the duplicate sales invoice agree with the sales journal entry (procedure 13b).	1	5	5	93	100	0	0	3.0
4. Evidence that pricing, extensions, and footings are checked (initials and correct amounts) (procedure 13b).	1	5	5	93	100	10	10	16.4
5. Quantity and other data on the bill of lading agree with the duplicate sales invoice and sales journal (procedure 13c).	1	5	5	93	100	4	4	9.0
6. Quantity and other data on the sales order agree with the duplicate sales invoice (procedure 13d).	1	7	5	66	70	1	1.5	6.6
7. Quantity and other data on the customer order agree with the duplicate sales invoice (procedure 13e).	1.5	9	5	51	50	0	0	5.9
8. Credit is approved (procedure 13e).	1.5	9	5	51	50	10	20	1.6
9. For recorded sales in the sales journal, the file of supporting documents includes a duplicate sales invoice, bill of lading, sales order, and customer order (procedure 14).	1	7	5	66	65	0	0	4.6

Intended use of sampling results:

1. Effect on Audit Plan: Controls tested through attributes 1, 3, 6, 7, and 9 can be viewed as operating effectively given that TER equals or exceeds CUER. Additional emphasis is needed in confirmation, allowance for uncollectible accounts, cutoff tests, and price tests for the financial statement audit due to results of tests for attributes 2, 4, 5, and 8.

2. Effect on Report on Internal Control: CUER exceeds TER for attributes 2, 4, 5, and 8. These findings have been communicated to management to allow an opportunity for correction of the control deficiency to be made before year-end. If timely correction is made by management, the corrected controls will be tested before year-end for purposes of reporting on internal control over financial reporting.

3. Recommendations to Management: Each of the exceptions should be discussed with management. Specific recommendations are needed to correct the internal verification of sales invoices and to improve the approach to credit approvals.

Need for Professional Judgment

A criticism occasionally leveled against statistical sampling is that it reduces the auditor's use of professional judgment. A comparison of the 14 steps discussed in this chapter for nonstatistical and attributes sampling shows that this criticism is unwarranted. For proper application, attributes sampling requires auditors to use professional judgment in most of the steps. To select the initial sample size, auditors depend primarily on TER and ARO, which require a high level of professional judgment, as well as EPER, which requires a careful estimate. Similarly, the final evaluation of the adequacy of the entire application of attributes sampling, including the adequacy of the sample size, must also be based on high-level professional judgment.

TABLE 1 Determining Sample Size for Attributes Sampling*

5 PERCENT RISK OF OVERRELIANCE

Estimated Population Exception Rate (in Percent)	Tolerable Exception Rate (in Percent)										
	2	3	4	5	6	7	8	9	10	15	20
0.00	149	99	74	59	49	42	36	32	29	19	14
0.25	236	157	117	93	78	66	58	51	46	30	22
0.50	313	157	117	93	78	66	58	51	46	30	22
0.75	386	208	117	93	78	66	58	51	46	30	22
1.00		257	156	93	78	66	58	51	46	30	22
1.25		303	156	124	78	66	58	51	46	30	22
1.50		392	192	124	103	66	58	51	46	30	22
1.75			227	153	103	88	77	51	46	30	22

2.00			294	181	127	88	77	68	46	30	22
2.25			390	208	127	88	77	68	61	30	22
2.50				234	150	109	77	68	61	30	22
2.75				286	173	109	95	68	61	30	22
3.00				361	195	129	95	84	61	30	22
3.25				458	238	148	112	84	61	30	22
3.50					280	167	112	84	76	40	22
3.75					341	185	129	100	76	40	22
4.00					421	221	146	100	89	40	22
5.00						478	240	158	116	40	30
6.00								266	179	50	30
7.00									298	68	37

10 PERCENT RISK OF OVERRELIANCE

Estimated Population Exception Rate (in Percent)	**Tolerable Exception Rate (in Percent)**										
	2	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**15**	**20**
0.00	114	76	57	45	38	32	28	25	22	15	11
0.25	194	129	96	77	64	55	48	42	38	25	18
0.50	194	129	96	77	64	55	48	42	38	25	18
0.75	265	129	96	77	64	55	48	42	38	25	18
1.00	398	176	96	77	64	55	48	42	38	25	18
1.25		221	132	77	64	55	48	42	38	25	18
1.50		265	132	105	64	55	48	42	38	25	18
1.75		390	166	105	88	55	48	42	38	25	18
2.00			198	132	88	75	48	42	38	25	18
2.25			262	132	88	75	65	42	38	25	18
2.50			353	158	110	75	65	58	38	25	18
2.75			471	209	132	94	65	58	52	25	18
3.00				258	132	94	65	58	52	25	18
3.25				306	153	113	82	58	52	25	18
3.50				400	194	113	82	73	52	25	18
3.75					235	131	98	73	52	25	18
4.00					274	149	98	73	65	25	18
5.00						318	160	115	78	34	18
6.00							349	182	116	43	25
7.00								385	199	52	25
8.00									424	60	25

MULTIPLE CHOICE QUESTIONS FROM CPA EXAMINATIONS

. Select the most appropriate response for each question.

1 . If all other factors specified in a sampling plan remain constant, changing the ARO from 5% to 10% will cause the required sample size to

(a) increase.

(b) remain the same.

(c) decrease.

(d) become indeterminate.

2 . If all other factors specified in a sampling plan remain constant, changing the TER from 9% to 6% will cause the required sample size to

(a) increase.

(b) remain the same.

(c) decrease.

(d) become indeterminate.

3. Of the four factors that determine the initial sample size in attributes sampling (population size, tolerable exception rate, acceptable risk of overreliance, and expected population exception rate), which factor has the least effect on sample size?

(a) Population size

(b) Expected population exception rate

(c) To lerable exception rate

(d) Acceptable risk of overreliance

4. The sample size of a test of controls varies inversely with:

	Expected population exception rate	Tolerable exception rate
(a)	No	Yes
(b)	Yes	No
(c)	No	No
(d)	Ye s	Ye s

5 . From a random sample of items listed from a client's inventory count, an auditor estimates with a 90% confidence level that the CUER is between 4% and 6%. The auditor's major concern is that there is one chance in ten that the true exception rate in the population is

(a) more than 6%.

(b) less than 6%.

(c) more than 4%.

(d) less than 4%.

6. The upper precision limit (CUER) in statistical sampling is

(a) the percentage of items in a sample that possess a particular attribute.

(b) the percentage of items in a population that possess a particular attribute.

(c) a statistical measure, at a specified confidence level, of the maximum rate of occurrence of an attribute.

(d) the maximum rate of exception that the auditor would be willing to accept in the population without altering the planned reliance on the attribute.

7 . In addition to evaluating the frequency of deviations in tests of controls, an auditor should also consider certain qualitative aspects of the deviations. The auditor most likely would give additional consideration to the implications of a deviation if it was

(a) the only deviation discovered in the sample.

(b) identical to a deviation discovered during the prior year’s audit.

(c) caused by an employee’s misunderstanding of instructions.

(d) initially concealed by a forged document.

8 . An auditor who uses statistical sampling for attributes in testing internal controls

should reduce the planned reliance on a prescribed control when the

(a) sample exception rate plus the allowance for sampling risk equals the tolerable rate.

(b) sample exception rate is less than the expected rate of exception used in planning the sample.

(c) tolerable rate less the allowance for sampling risk exceeds the sample exception rate.

(d) sample exception rate plus the allowance for sampling risk exceeds the tolerable rate.

9 . An advantage of statistical sampling over nonstatistical sampling is that statistical sampling helps an auditor

(a) minimize the failure to detect errors and fraud.

(b) eliminate the risk of nonsampling errors.

(c) design more effective audit procedures.

(d) measure the sufficiency of the audit evidence by quantifying sampling risk.

10 . Which of the following best illustrates the concept of sampling risk?

(a) The documents related to the chosen sample may not be available to the auditor for inspection.

(b) An auditor may fail to recognize errors in the documents from the sample.

(c) A randomly chosen sample may not be representative of the population as a whole for the characteristic of interest.

(d) An auditor may select audit procedures that are not appropriate to achieve the specific objective.

11 . For which of the following tests would an auditor most likely use attribute sampling?

(a) Selecting accounts receivable for confirmation of account balances.

(b) Inspecting employee time cards for proper approval by supervisors.

(c) Making an independent estimate of the amount of a LIFO inventory.

(d) Examining invoices in support of the valuation of fixed asset additions

Chapter (3)

COMPLETING THE AUDIT

The first three phases of the audit process were studied, as outlined by the flowchart in the margin. Attention is now given to the fourth and final phase which is: completing the audit, the final phase of the audit demands careful and thoughtful review of the audit by an experienced and knowledgeable person. In addition to reviewing the results, several other aspects of completing the audit are critical to the success of an audit.

Summary of the Audit Process

PHASE I

Plan and design an audit approach

PHASE II

Perform tests of controls and
substantive tests of transactions

PHASE III

Perform analytical
procedures and
tests of details
of balances

PHASE IV

Complete the audit and issue an audit report

Phase IV— Completing the Audit

Perform additional tests for presentation and disclosure

Review for contingent liabilities

Review for subsequent events

Accumulate final evidence

Evaluate results

Issue audit report

Communicate with audit committee and management

PERFORM ADDITIONAL TESTS FOR PRESENTATION AND DISCLOSURE

Earlier we described the need to perform procedures to satisfy the three categories of audit objectives: transaction-related objectives, balance-related objectives, and presentation and disclosure-related objectives. Our discussion of the first three phases of the audit explained how auditors design and perform audit tests to obtain sufficient appropriate evidence to support each of these categories of audit objectives. Our illustrations of transaction cycle testing emphasized performing audit tests to support the six transaction-related and the eight balance-related audit objectives. As part of phase IV of the audit, auditors evaluate evidence they obtained during the first three phases of the

audit to determine whether they should perform additional procedures for presentation and disclosure-related objectives. Auditors approach obtaining evidence for presentation and disclosure objectives consistent with how they approach obtaining evidence for transaction-related and balance-related objectives.

- Perform procedures to obtain an understanding of controls related to presentation and disclosure objectives as a part of risk assessment procedures.
- Conduct tests of controls related to disclosures when the initial assessment of control risk is below maximum.
- Perform substantive procedures to obtain assurance that all audit objectives are achieved for information and amounts presented and disclosed in the financial statements

Often, procedures for presentation and disclosure-related objectives are integrated with the auditor's tests for transaction-related and balance-related objectives. For example, as part of the audit of accounts receivable, auditors evaluate the need to separate notes receivable and amounts due from affiliates and trade accounts due from customers. They must also determine that current and noncurrent receivables are classified separately and any factoring or discounting of notes receivable is disclosed.

While much of the information presented and disclosed in the financial statements is audited as part of the auditor's testing in earlier phases of the audit, in phase IV auditors evaluate evidence obtained during the first three phases of the audit to assess whether additional evidence is needed for the presentation and disclosure objectives. In phase I V, auditors also evaluate whether the overall presentation of the financial statements and related footnotes complies with accounting standards. This includes an evaluation of whether individual financial statements reflect the appropriate classification and description of accounts consistent with requirements and that the information is presented in proper form and with the proper terminology required by accounting standards.

One of the auditor's primary concerns related to presentation and disclosure-related objectives is determining whether management has disclosed all required information (completeness objective for presentation and disclosure). To assess risks that the completeness objective for presentation and disclosure is not satisfied, auditors consider information obtained during the first three phases of audit testing to determine if they are aware of facts and circumstances that should be disclosed.

Due to the unique nature of disclosures related to contingent liabilities and subsequent events, auditors often assess the risks as high that all required information may not be completely disclosed in the footnotes. Audit tests performed in earlier audit phases often do not provide sufficient appropriate evidence about contingent liabilities and subsequent events. Therefore, auditors design and perform procedures in every audit to review for contingent liabilities and subsequent events as part of their phase IV testing. These procedures are discussed next.

REVIEW FOR CONTINGENT LIABILITIES AND COMMITMENTS

A contingent liability is a potential future obligation to an outside party for an unknown amount resulting from activities that have already taken place. Material contingent liabilities must be disclosed in the footnotes. Three conditions are required for a contingent liability to exist:

1. There is a potential future payment to an outside party or the impairment of an asset that resulted from an existing condition
2. There is uncertainty about the amount of the future payment or impairment

3. The outcome will be resolved by some future event or events

For example, a lawsuit that has been filed but not yet resolved meets all three conditions.

Accounting standards use two primary approaches in dealing with uncertainty in loss contingencies. The first measures the contingency using a fair value approach. The second approach uses a probability threshold. With the probability threshold, the standards describe three levels of likelihood of occurrence (ranging from remote to probable) and the appropriate financial statement treatment for each likelihood. To evaluate whether the client has applied the appropriate approach and treatment, the auditor must exercise considerable professional judgment.

Contingency footnotes should describe the nature of the contingency to the extent it is known and the opinion of legal counsel or management as to the expected outcome.

Auditors are especially concerned about certain contingent liabilities:

- Pending litigation for patent infringement, product liability, or other actions
- Income tax disputes
- Product warranties

- Notes receivable discounted
- Guarantees of obligations of others
- Unused balances of outstanding letters of credit

Auditing standards make it clear that management, not the auditor, is responsible for identifying and deciding the appropriate accounting treatment for contingent liabilities. In many audits, it is impractical for auditors to uncover contingencies without management's cooperation.

The auditor's primary objectives in verifying contingent liabilities are:

- Evaluate the accounting treatment of known contingent liabilities to determine whether management has properly classified the contingency (classification presentation and disclosure objective).
- Identify to the extent practical any contingencies not already identified by management (completeness presentation and disclosure objective).

Closely related to contingent liabilities are commitments. They include such things as agreements to purchase raw materials or to lease facilities at a certain price and to sell merchandise at a fixed price, as well as bonus plans, profit-sharing and pension plans, and royalty agreements. The most important characteristic of a commitment is the agreement to

commit the firm to a set of fixed conditions in the future, regardless of what happens to profits or the economy as a whole. Presumably the entity agrees to commitments to better its own interests, but they may turn out to be less or more advantageous than originally anticipated. Companies ordinarily describe all commitments either in a separate footnote or combine them with a footnote related to contingencies.

Audit Procedures for Finding Contingencies

Many of these potential obligations are verified as an integral part of various segments of the audit rather than as a separate activity near the end of the audit. For example, auditors test for unused balances in outstanding letters of credit as a part of confirming bank balances and loans from banks. Similarly, auditors consider the possibility of income tax disputes as a part of analyzing income tax expense, reviewing the general correspondence file, and examining revenue agent reports. Even if contingencies are verified separately, auditors commonly perform the tests well before the last few days of completing the audit to ensure their proper verification. Tests of contingent liabilities near the end of the audit are more of a review than an initial search.

The first step in the audit of contingencies is to determine whether any contingencies exist (occurrence presentation and disclosure objective). As you know from studying other audit areas, it is more difficult to discover unrecorded transactions or events than to verify recorded information. Once the auditor knows that contingencies exist, evaluating their materiality and the footnote disclosures can ordinarily be satisfactorily resolved.

The following are some audit procedures commonly used to search for contingent liabilities, but not all are applicable to every audit:

- Inquire of management (orally and in writing) about the possibility of unrecorded contingencies. In these inquiries, the auditor must be specific in describing the different kinds of contingencies that may require disclosure as reminders to management of contingencies they overlooked or do not fully understand. If management overlooked a contingency or does not fully comprehend accounting disclosure requirements, the inquiry can be helpful to identify required disclosures. At the completion of the audit, auditors typically ask management to make a written statement as a part of the letter of representation (discussed later in this chapter) that it is aware of no

undisclosed contingent liabilities. Naturally, inquiries of management are not useful in uncovering the intentional failure to disclose contingencies.

- Review current and previous years' internal revenue agent reports for income tax settlements. The reports may indicate areas or years in which there are un settled disagreements. If a review has been in progress for a long time, there is an increased likelihood of a tax dispute.
- Review the minutes of directors' and stockholders' meetings for indications of lawsuits or other contingencies.
- Analyze legal expense for the period under audit and review invoices and statements from legal counsel for indications of contingent liabilities, especially lawsuits and pending tax assessments.
- Obtain a letter from each major attorney performing legal services for the client as to the status of pending litigation or other contingent liabilities. This procedure is examined in more depth shortly.
- Review audit documentation for any information that may indicate a potential contingency. For example, bank confirmations may indicate notes receivable discounted or guarantees of loans.

- Examine letters of credit in force as of the balance sheet date and obtain a confirmation of the used and unused balances.

Evaluation of Known Contingent Liabilities

If auditors conclude that there are contingent liabilities, they must evaluate the significance of the potential liability and the nature of the disclosure needed in the financial statements to obtain evidence about the occurrence and rights and obligations presentation and disclosure objective. In some instances, the potential liability is sufficiently well known to be included in the statements as an actual liability under the probability threshold approach. In other instances, disclosure may be unnecessary if the contingency is highly remote or immaterial. CPA firms often obtain a separate evaluation of the potential liability from its own legal counsel, especially highly material ones, rather than relying on management or management's attorneys. Because they are advocates for the client, the client's attorneys may lose perspective in evaluating the likelihood of losing the case and the amount of the potential judgment. For those contingencies that require disclosure, the auditor also reviews the draft footnote to ensure that the disclosed information is understandable and fairly states the conditions of the contingency.

Audit Procedures for Finding Commitments

The search for unknown commitments is usually performed as a part of the audit of each audit area. For example, in verifying sales transactions, the auditor should be alert for sales commitments. Similarly, commitments for the purchase of raw materials or equipment can be identified as a part of the audit of each of these accounts. The auditor should also be aware of the possibility of commitments when reading minutes, contracts, and correspondence files.

Inquiry of the client's attorneys

Inquiry of the client's attorneys is a major procedure auditors rely on for evaluating known litigation or other claims against the client and identifying additional ones. The auditor relies on the attorney's expertise and knowledge of the client's legal affairs to provide a professional opinion about the expected outcome of existing lawsuits and the likely amount of the liability, including court costs. The attorney is also likely to know of pending litigation and claims that management may have overlooked.

Many CPA firms analyze legal expense for the entire year and have the client send a standard inquiry letter to every attorney the client has been involved with in the current or preceding year, plus any attorney the firm occasionally

engages. In some cases, this involves a large number of attorneys, including some who deal in aspects of law that are far removed from potential lawsuits.

The standard inquiry to the client's attorney, prepared on the client's letterhead and signed by one of the company's officials, should include the following:

- A list including (1) pending threatened litigation and (2) asserted or unasserted claims or assessments with which the attorney has had significant involvement. This list is typically prepared by management, but management may request that the attorney prepare the list.
- A request that the attorney furnish information or comment about the progress of each item listed. The desired information includes the legal action the client intends to take, the likelihood of an unfavorable outcome, and an estimate of the amount or range of the potential loss.
- A request of the law firm to identify any unlisted pending or threatened legal actions or a statement that the client's list is complete.
- A statement informing the attorney of the attorney's responsibility to inform management of legal matters requiring disclosure in the financial statements and to respond directly to the auditor. If the attorney chooses to

limit a response, reasons for doing so are to be included in the letter.

Attorneys in recent years have become reluctant to provide certain information to auditors because of their own exposure to legal liability for providing incorrect or confidential information. The nature of the refusals by attorneys to provide auditors with complete information about contingent liabilities falls into two categories:

1. The attorneys refuse to respond due to a lack of knowledge about matters involving contingent liabilities.
2. The attorneys refuse to disclose information that they consider confidential.

For example, the attorney might be aware of a violation of a patent agreement that could result in a significant loss to the client if it were known (unasserted claim). Such an instance falls under the second category. The inclusion of the information in a footnote could actually cause the lawsuit and therefore be damaging to the client.

If an attorney refuses to provide the auditor with information about material existing lawsuits (asserted claims) or unasserted claims, auditors must modify their audit report to reflect the lack of available evidence (a scope limitation, which requires a qualified or disclaimer of opinion). This

requirement in the auditing standards has the effect of requiring management to give its attorneys permission to provide contingent liability information to auditors and to encourage attorneys to cooperate with auditors in obtaining information about contingencies.

As directed by the Sarbanes–Oxley Act, rules require attorneys serving public companies to report material violations of federal securities laws committed by the company. An attorney must report violations to the public company's chief legal counsel or chief executive officer. If the legal officer or CEO fails to appropriately respond, the attorney must report violations to the company's audit committee. Responding to these requirements, the American Bar Association subsequently amended its attorney–client confidentiality rules to permit attorneys to breach confidentiality if a client is committing a crime or fraud.

REVIEW FOR SUBSEQUENT EVENTS

The third part of completing the audit included in the sidebar is the review for subsequent events. The auditor must review transactions and events that occurred after the balance sheet date to determine whether any of these transactions or events affect the fair presentation or disclosure of the current period statements. The auditing procedures required by auditing

standards to verify these transactions and events are commonly called the review for subsequent events or post-balance-sheet review. The auditor's responsibility for reviewing subsequent events is normally limited to the period beginning with the balance sheet date and ending with the date of the auditor's report. Because the date of the auditor's report corresponds to the completion of the important auditing procedures in the client's office, the subsequent events review should be completed near the end of the audit.

Types of Subsequent Events

Two types of subsequent events require consideration by management and evaluation by the auditor: those that have a direct effect on the financial statements and require adjustment of the current year's financial statement amounts and those that have no direct effect on the financial statement amounts but for which disclosure is required.

Those That Have a Direct Effect on the Financial Statements and Require Adjustment Some events that occur after the balance sheet date provide additional information to management that helps them determine the fair presentation of account balances as of the balance sheet date. Information about those events helps auditors in verifying the balances. For example, if the auditor is having difficulty determining

the correct valuation of inventory because of obsolescence, the sale of raw material inventory as scrap in the subsequent period will indicate the correct value of the inventory as of the balance sheet date.

Subsequent period events, such as the following, require an adjustment of account balances in the current year's financial statements if the amounts are material:

- Declaration of bankruptcy by a customer with an outstanding accounts receivable balance because of the customer's deteriorating financial condition
- Settlement of litigation at an amount different from the amount recorded on the books
- Disposal of equipment not being used in operations at a price below the current book value.

When subsequent events are used to evaluate the amounts included in the year-end financial statements, auditors must distinguish between conditions that existed at the balance sheet date and those that came into being after the end of the year. The subsequent information should not be incorporated directly into the statements if the conditions causing the change in valuation took place after year-end. For example, assume one type of a client's inventory suddenly becomes obsolete because of a technology change after the balance

sheet date. The sale of the inventory at a loss in the subsequent period is not relevant in the valuation of inventory for obsolescence in this case.

Auditors of accelerated filer public companies must inquire about and consider any information about subsequent events that materially affects the effectiveness of internal control over financial reporting as of the end of the fiscal period. If auditors conclude that the events reflect a material weakness that existed at year-end, they must give an adverse opinion on internal control over financial reporting. If they are unable to determine the effect of the subsequent event on the effectiveness of internal control, they must disclaim their opinion on internal control.

Those That Do Not Have a Direct Effect on the Financial Statements but for Which Disclosure May Be Required Subsequent events of this type are events that provide evidence about conditions that did not exist at the date of the balance sheet being reported on but arose after the balance sheet date and may be significant enough to require disclosure. Examples of these types of nonrecognized subsequent events include:

- A decline in the market value of securities held for temporary investment or resale

- The issuance of bonds or equity securities
- A decline in the market value of inventory as a consequence of government action barring further sale of a product
- The uninsured loss of inventories as a result of fire
- A merger or an acquisition.

Nonrecognized subsequent events may require disclosure if they are significant and if the financial statements would be misleading without the disclosure. Ordinarily these events can be adequately disclosed by the use of footnotes. Occasionally, one may be so significant as to require disclosure in supplemental financial statements, which include the effect of the event as if it had occurred on the balance sheet date. An example is an extremely material merger.

Auditors of accelerated filer public companies may also identify events related to internal control over financial reporting that arose subsequent to year-end. If the auditor determines that these subsequent events have a material effect on the company's internal control over financial reporting, the auditor's report must include an explanatory paragraph either describing the event and its effect or

directing the reader to a disclosure in management's report on internal control of the event and its effect.

There are two categories of audit procedures for the subsequent events review:

1. Procedures normally integrated as a part of the verification of year-end account balances
2. Procedures performed specifically for the purpose of discovering events or trans actions that must be recognized as subsequent events

The first category includes cutoff and valuation tests done as a part of the tests of details of balances. For example, auditors examine subsequent period sales and acquisition transactions to determine whether the cutoff is accurate. Auditors also test the collectability of accounts receivable by reviewing subsequent period cash receipts to evaluate the valuation of the allowance for uncollectible accounts.

The second category of tests are performed specifically to obtain information to incorporate into the current year's account balances or footnotes as tests of the completeness presentation and disclosure objective. These tests include the following:

Review Records Prepared Subsequent to the Balance Sheet Date Auditors should review journals and ledgers to

determine the existence and nature of significant transactions related to the current year. If journals are not kept up-to-date, auditors should review documents that will be used to prepare the journals.

Auditors of public companies that are accelerated filers must inquire about and examine statements issued during the subsequent events review period, such as relevant internal audit reports and regulatory agency reports on the company's internal control over financial reporting.

Review Internal Statements Prepared Subsequent to the Balance Sheet Date In the review, auditors should emphasize changes in the business compared to results for the same period in the year under audit and changes after year-end. They should pay careful attention to major changes in the business or environment in which the client is operating. Auditors should discuss the interim statements with management to determine whether they are prepared on the same basis as the current period statements, and also inquire about significant changes in the operating results.

Examine Minutes Issued Subsequent to the Balance Sheet Date Auditors must examine the minutes of stockholders and directors meetings subsequent to the balance sheet date for

subsequent events affecting the current period financial statements.

Correspond with Attorneys As discussed earlier in the chapter, auditors correspond with attorneys as a part of the search for contingent liabilities. Auditors normally request the attorney to date and mail the letter as of the expected completion date of field work to fulfill the auditors' responsibility for subsequent events.

Inquire of Management Inquiries vary from client to client, but normally include significant changes in the assets or capital structure of the company after the balance sheet date, the current status of items that were not completely resolved at the balance sheet date, and unusual adjustments made subsequent to the balance sheet date. Public company auditors must also include inquiries of management about any changes in internal control over financial reporting made subsequent to the end of the fiscal period. Inquiries of management about subsequent events must be done with appropriate client personnel to obtain meaningful answers. For example, it is not useful for the auditor to discuss tax or union matters with an accounts receivable supervisor. Depending on the information desired, auditors usually make inquiries of the controller, vice presidents, and the president.

Obtain a Letter of Representation The letter of representation written by the client's management to the auditor formalizes statements made by management about different matters throughout the audit, including discussions about subsequent events. This letter is mandatory and includes other relevant matters. This letter is discussed in the following section.

Occasionally, the auditor determines that a subsequent event that affects the current period financial statements occurred after the field work was completed but before the audit report was issued. The source of such information is typically management or the media. For example, what if an audit client acquired another company after the auditor's last day of field work?, assume the acquisition occurred on March 23, when the last day of field work was March 11. In that situation, auditing standards require the auditor to extend audit tests for the newly discovered subsequent event to make sure that it is correctly disclosed. The auditor has two equally acceptable options for expanding subsequent events tests:

1. Expand all subsequent events tests to the new date
2. Restrict the subsequent events review to matters related to the new subsequent event.

For the first option, auditors simply change the audit report date to the new date. For the second option, the auditor issues a dual-dated audit report, meaning that the audit report includes two dates: the first date for the completion of field work, except for the specific exception, and the second date, which is always later, for the exception. In the example, assume the auditor returned to the client's premises to perform audit tests pertaining only to the acquisition and completes those tests on March 31. The audit report will be dual-dated as follows: March 11, 2014, except for note 17, as to which the date is March 31, 2014.

FINAL EVIDENCE ACCUMULATION

In addition to the review for subsequent events, the auditor has several final evidence accumulation responsibilities that apply to all cycles. Five types of final evidence accumulation are discussed in this section: perform final analytical procedures, evaluate the going-concern assumption, obtain a management representation letter, consider information accompanying the basic financial statements, and read other information in the annual report. Each of these is done late in the audit.

Perform Final Analytical Procedures

Auditing standards require auditors to perform analytical procedures during the completion of the audit. They are useful as a final review for material misstatements or financial problems not noted during other testing and to help the auditor take a final objective look at the financial statements. It is common for a partner to do the analytical procedures during the final review of audit documentation and financial statements. Typically, a partner has a good understanding of the client and its business because of ongoing relationships. This knowledge combined with effective analytical procedures help the partner identify possible oversights in an audit. The opening story in the audit of Westside Industries illustrates this point.

When performing analytical procedures during the final review stage, the partner generally reads the financial statements, including footnotes, and considers the adequacy of evidence gathered about unusual or unexpected account balances or relationships identified during planning or while conducting the audit. The partner also considers unusual or unexpected account balances or relationships that were not previously identified.

Results from final analytical procedures may indicate that additional audit evidence is necessary.

Evaluate Going-Concern Assumption

Auditing standards require the auditor to evaluate whether there is a substantial doubt about a client's ability to continue as a going concern for at least one year beyond the balance sheet date. Auditors make that assessment initially as a part of planning but may revise it after obtaining new information. For example, an initial assessment of going concern may need revision if the auditor discovers during the audit that the company has defaulted on a loan, lost its primary customer, or decided to dispose of substantial assets to pay off loans. Auditors use analytical procedures, discussions with management about potential financial difficulties, and their knowledge of the client's business gained throughout the audit to assess the likelihood of financial failure within the next year.

A final assessment of the entity's going-concern status is desirable after all evidence has been accumulated and proposed audit adjustments have been incorporated into the financial statements. When auditors have reservations about the going-concern assumption, they must evaluate management's plans to avoid bankruptcy and the feasibility

of achieving these plans. Making the final decision whether to issue a report with a going-concern explanatory paragraph can be time-consuming and difficult, especially during an economic downturn .

Obtain Management Representation Letter

Auditing standards require the auditor to obtain a letter of representation documenting management's most important oral representations made during the audit. The letter is prepared on the client's letterhead, addressed to the CPA firm, and signed by high-level corporate officials, usually the president and chief financial officer. While the letter implies that it has originated with the client, it is common practice for the auditor to prepare the letter and request the client to type it on the company's letterhead and sign it. Refusal by a client to prepare and sign the letter requires a qualified opinion or disclaimer of opinion. The letter should be dated no earlier than the date of the auditor's report to make sure that there are adequate representations about subsequent events. The three purposes of the client letter of representation are:

1. To impress upon management its responsibility for the assertions in the financial statements. It is easy for management to forget that they are responsible, not the

auditor, for the fair presentation of financial statements, especially in smaller companies that lack personnel with expertise in accounting.

2. To remind management of potential misstatements or omissions in the financial statements. For example, if the letter of representation includes a reference to pledged assets and contingent liabilities, honest management may be reminded of its unintentional failure to disclose the information adequately, which helps satisfy the completeness presentation and disclosure objective. To fulfill this objective, the letter of representation should be sufficiently detailed to act as a reminder to management.

3. To document the responses from management to inquiries about various aspects of the audit. This provides written documentation of client representations in the event of disagreement or a lawsuit between the auditor and client. A letter of representation also helps reduce misunderstandings between management and the auditor.

Auditing standards suggest four categories of specific matters that should be included. The four categories, with examples of each, are:

1. Financial statements

- Management's acknowledgment of its responsibility for the fair presentation of the financial statements
- Management's belief that the financial statements are fairly presented in conformity with applicable accounting standards

2. Completeness of information

- Availability of all financial records and related data
- Completeness and availability of all minutes of meetings of stockholders, directors, and committees of directors
- Absence of unrecorded transactions

3. Recognition, measurement, and disclosure

- Management's belief that the effects of any uncorrected financial statement misstatements are immaterial to the financial statements (a summary of these items should be included in or attached to the letter)
- Information concerning fraud involving (a) management, (b) employees who have significant roles in internal control, or (c) others where the fraud could have a material effect on the financial statements
- Information concerning related party transactions and amounts receivable from or payable to related parties.

- Unasserted claims or assessments that the entity's lawyer has advised are

probable of assertion and must be disclosed in accordance with accounting

standards

4. Subsequent events

- Bankruptcy of a major customer with an outstanding account receivable at the balance sheet date
- A merger or acquisition after the balance sheet date

PCAOB Standard 5 requires the auditor to obtain written representations from management about its responsibility for internal control over financial reporting and management's conclusion about the effectiveness of internal control over financial reporting as of the end of the fiscal period. Auditors of public companies may obtain a combined representation letter for both the audit of the financial statements and the audit of internal control.

A client representation letter is a written statement from a nonindependent source and therefore cannot be regarded as reliable evidence. However, the letter does provide documentation that management has been asked certain questions to make sure that management understands its

responsibilities and to protect the auditor if management files claims against the auditor.

In some audits, the auditor may find other evidence that contradicts statements in the letter of representation. In such cases, the auditor should investigate the circumstances and consider whether representations in the letter are reliable.

Consider Supplementary Information in Relation to Financial Statements as a Whole

Clients often include additional information beyond the basic financial statements in materials prepared for management or outside users. Auditing standards refer to this additional information as supplementary information in relation to the financial statements as a whole.

Auditing standards intentionally refrain from defining or restricting supplementary information to enable companies to individualize the information to meet the needs of statement users. However, several types of information are commonly included in the additional information section, such as detailed comparative statements supporting the totals on the primary financial statements for accounts such as cost of goods sold and operating expenses.

Auditors must clearly distinguish their audit and reporting responsibility for the primary financial statements and for

supplementary information. Usually, the auditor has not performed a sufficiently detailed audit to justify an opinion on the additional information. In some instances, however, the auditor may be engaged by the client to report on the supplementary information accompanying the basic financial statements. To complete that engagement, the supplementary information must be derived from the accounting records used to generate the basic financial statements and involve the same time period as the basic financial statements. Additionally, the auditor cannot have issued an adverse opinion or disclaimer of opinion on the basic financial statements. When reporting on supplementary information, the auditor users the same materiality as that used in forming an opinion on the basic financial statements. As a result, the additional procedures required are less extensive than if the auditor were issuing an opinion on the information taken by itself.

Auditor reporting on supplementary information can be either in an explanatory paragraph following the opinion paragraph in the auditor's report on the financial statements or in a separate report on the supplementary information. The following is an example of an explanatory paragraph

reporting on supplementary information in relation to the financial statements as a whole:

Our audit was conducted for the purpose of forming an opinion on the financial statements as a whole. The accompanying information on pages x through y is presented for purposes of additional analysis and is not a required part of the financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the financial statements. The information has been subjected to the auditing procedures applied in the audit of the financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the financial statements or to the financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the information is fairly stated in all material respects in relation to the financial statements as a whole.

If the auditor concludes that the supplementary information is materially misstated in relation to the financial statements as a whole, the auditor should request management to revise

the supplementary information. If management does not make the necessary modifications, the auditor should modify the auditor's opinion on the supplementary information and describe the misstatement in the auditor's report. If a separate report is being issued on the supplementary information, the auditor should withhold the auditor's report on the supplementary information.

Sometimes additional information is required by accounting standards, which auditing standards refer to as required supplementary information. Required supplementary information is not part of the basic financial statements; however, a designated accounting standards setter considers the information to be an essential part of financial reporting. When required supplementary information accompanies the basic financial statements, auditing standards require the auditor to perform certain additional procedures that are limited to inquiry of management about the methods of preparing the information and comparison of the information for consistency with management's responses to the auditor's inquiries, the basic financial statements, and to information the auditor obtains during the audit of the basic financial statements. Because these limited procedures do not provide sufficient evidence to provide any assurance about the

required supplementary information, the auditor's report on the basic financial statements includes an explanatory paragraph that contains a disclaimer of opinion about the required supplementary information.

Read Other Information in the Annual Report

Auditing standards requires the auditor to read other information included in annual reports pertaining directly to the financial statements. For example, assume that the president's letter in the annual report refers to an increase in earnings per share from $2.60 to $2.93. The auditor is required to compare that information with the financial statements to make sure it corresponds.

Auditor responsibility to read other information included in annual reports pertains only to information that is not a part of the financial statements but is published with them. Examples are the president's letter and explanations of company activities included in annual reports of nearly all publicly held companies. It usually takes auditors only a few minutes to make sure that the nonfinancial statement information is consistent with the statements. If auditors conclude that a material inconsistency exists, they should request the client to change the information. If the client refuses, which would be unusual, the auditor should include

an explanatory paragraph in the audit report or withdraw from the engagement.

EVALUATE RESULTS

After performing all audit procedures in each audit area, including the review for contingencies and subsequent events and accumulating final evidence, the auditor must integrate the results into one overall conclusion about the financial statements. Ultimately, the auditor must decide whether sufficient appropriate audit evidence has been accumulated to warrant the conclusion that the financial statements are stated in accordance with accounting standards applied on a basis consistent with those of the preceding year. Similarly, when issuing a report on internal control, auditors must also arrive at an overall conclusion about the effectiveness of internal control over financial reporting. The five main aspects of evaluating the results are discussed next.

Sufficient Appropriate Evidence

To make a final evaluation as to whether sufficient appropriate evidence has been accumulated, the auditor reviews the audit documentation for the entire audit to determine whether all material classes of transactions, accounts, and disclosures have been adequately tested, considering all circumstances of the audit. An important part of the review is

to make sure that all parts of the audit program have been accurately completed and documented and that all audit objectives have been met. The auditor must decide whether the audit program is adequate, considering problem areas identified as the audit progressed. For example, if misstatements were discovered during tests of sales, the initial plans for tests of details of accounts receivable may have been insufficient.

As an aid in deciding whether the audit evidence is adequate, auditors often use a completing the audit checklist, which is a reminder of items that may have been over looked. If auditors conclude that sufficient evidence has not been obtained to decide whether the financial statements are fairly presented, they have two choices: accumulate additional evidence or issue either a qualified opinion or a disclaimer of opinion.

Evidence Supports Auditor's Opinion

An essential part of evaluating whether the financial statements are fairly stated involves the auditor's review of their summary of misstatements found in the audit. When any one misstatement is material, auditors should propose that the client correct the financial statements. It may be difficult to determine the appropriate amount of adjustment

because the exact amount of the misstatement may be unknown if it involves an estimate or includes sampling error. Nevertheless, the auditor must decide on the required adjustment. (In some audits there may be more than one material misstatement.)

In addition to individually material misstatements, there are often several immaterial misstatements that the client did not adjust. Auditors must combine individually immaterial misstatements to evaluate whether the combined amount is material. They can keep a record of these misstatements and combine them in different ways, but many auditors use an unadjusted misstatement audit schedule or summary of possible misstatements. Auditors are also required to consider the impact on the current year financial statements of misstatements identified in a prior year that were not corrected.

If auditors believe that there is sufficient evidence but they conclude that the financial statements are not fairly presented, they again have two choices: The statements must be revised to the auditor's satisfaction or either a qualified or an adverse opinion must be issued.

Financial Statement Disclosures

Before completing the audit, auditors must make a final evaluation of whether the dis-closures in the financial statements satisfy all presentation and disclosure objectives. As part of the final review for financial statement disclosures, many CPA firms require the completion of a financial statement disclosure checklist for every audit. These questionnaires are designed to remind the auditor of common disclosure problems in financial statements and to facilitate the final review of the entire audit by an independent partner.

Audit Documentation Review

There are three reasons why an experienced member of the audit firm must thoroughly review audit documentation at the completion of the audit:

1. to evaluate the performance of inexperienced personnel. A considerable portion of most audits is performed by audit personnel with fewer than four or five years of experience. These people may have sufficient technical training to conduct an adequate audit, but their lack of experience affects their ability to make sound professional judgments in complex situations.

2. To make sure that the audit meets the CPA firm's standard of performance. Within any CPA firm, the quality of staff performance varies considerably, but careful review by top-level personnel in the firm helps to maintain a uniform quality of auditing.

3. To counteract the bias that often enters in to the auditor's judgment. Auditors must attempt to remain objective throughout the audit, but they may lose proper perspective on a long audit when complex problems need to be solved.

Except for a final independent review, which is discussed shortly, the review of audit documentation should be conducted by someone who is knowledgeable about the client and the circumstances in the audit. Therefore, the auditor's immediate supervisor normally conducts the initial review of audit files prepared by another auditor. For example, the least experienced auditor's work is ordinarily reviewed by the audit senior. The senior's immediate superior, who is normally a supervisor or manager, reviews the senior's work and also reviews, less thoroughly, the schedules of the inexperienced auditor. Finally, the partner assigned to the audit must ultimately review all audit documentation, but the partner reviews those prepared by the supervisor or manager more thoroughly than the others.

While performing the review, each reviewer has discussions with the auditor responsible for preparing the audit documentation to learn how significant audit issues were resolved. Except for the final independent review, most audit documentation review is done as each segment of the audit is completed.

Independent Review

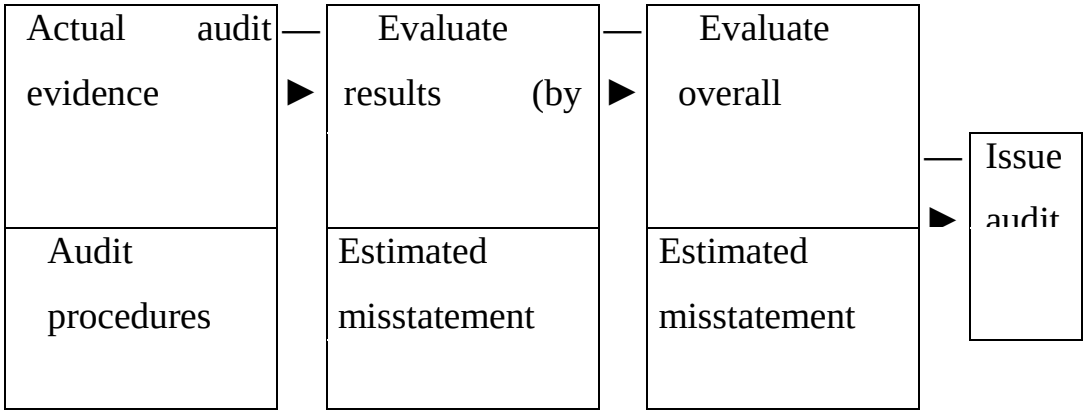
At the completion of larger audits, it is common to have the financial statements and the entire set of audit files reviewed by a completely independent reviewer who has not participated in the audit, but is a member of the audit firm doing the audit. An independent review, sometimes referred to as an engagement quality review, is required for SEC engagements, including the review of interim financial information and the audit of internal controls. This reviewer often takes an adversarial position to make sure the conduct of the audit was adequate. The audit team must be able to justify the evidence it has accumulated and the conclusions it reached on the basis of the circumstances of the audit.

Summary of Evidence Evaluation

Figure 1 summarizes evaluating whether there is sufficient appropriate evidence and whether the evidence supports the opinion on the financial statements. It shows that the auditor

evaluates the sufficiency and appropriateness of the evidence by first evaluating achieved audit risk, by account and by cycle, and then making the same evaluation for the overall financial statements. The auditor also evaluates whether the evidence supports the audit opinion by first estimating misstatements in each account and then for the overall financial statements. In practice, the evaluation of achieved audit risk and estimated misstatement are made at the same time. On the basis of these evaluations, the audit report is issued for the financial statements.

F1 Evaluating Results and Reaching Conclusions on the Basis of



ISSUE THE AUDIT REPORT

The auditor should wait to decide the appropriate audit report to issue until all evidence has been accumulated and evaluated, including all steps of completing the audit

discussed so far. Because the audit report is the only thing that most users see in the audit process, and the consequences of issuing an inappropriate report can be severe, it is critical that the report be correct.

When a CPA firm decides that a standard unqualified report is inappropriate, there will almost certainly be extensive discussions among technical partners in the CPA firm and often with client personnel. Most CPA firms have comprehensive audit reporting manuals to assist them in selecting the appropriate wording of the report they decide to issue.

COMMUNICATE WITH THE AUDIT COMMITTEE AND MANAGEMENT

After the audit is completed, several potential communications from the auditor may be sent to the audit committee or others charged with governance, including communication of detected fraud and illegal acts, internal control deficiencies, other communications with the audit committee, and management letters. The first three of these communications are required by auditing standards to make certain that those charged with governance, which is often the audit committee and senior management, are informed of audit findings and auditor recommendations. The fourth item,

management letters, is often communicated to operating management.

Auditing standards require the auditor to **communicate all fraud and illegal acts** to the audit committee or similarly designated group, regardless of materiality. The purpose is to assist the audit committee in performing its supervisory role for reliable financial statements.

the auditor must also communicate in writing **significant internal control deficiencies** and material weaknesses in the design or operation of internal control to those charged with governance. In larger companies, this communication is made to the audit committee and in smaller companies, it may be made to the owners or senior management.

Auditing standards require the auditor to communicate certain additional information obtained during the audit to those charged with governance, which is generally the audit committee. The purpose of this required communication is to keep the audit committee, or others charged with governance, informed about significant and relevant information for the oversight of the financial reporting process and to provide an opportunity for the audit committee to communicate important matters to the auditor. Thus, the auditing standard requirements are designed to encourage two-way

communications between the auditor and those charged with governance. There are four principal purposes of this required communication:

1. To communicate auditor responsibilities in the audit of financial statements. This communication includes discussion by the auditor that the audit of financial statements is designed to obtain reasonable, rather than absolute, assurance about material misstatements in the financial statements. For audits of financial statements that do not include an audit of internal control over financial reporting, the communication also indicates that the auditor is not providing an opinion on the effectiveness of internal control, in addition to other limitations of an audit of financial statements.

2. To provide an overview of the scope and timing of the audit. The purpose of this required communication is to provide a high-level overview, such as the auditor's approach to addressing significant risks and consideration of internal control, and timing of the audit. Details of the nature and timing of audit procedures is not appropriate to avoid compromising the effectiveness and predictability of 3. To provide those charged with governance with significant findings arising during the audit. These communications

might include discussion of material, corrected misstatements detected during the audit, the auditor's view of qualitative aspects of significant accounting practices and estimates, and significant difficulties encountered during the audit, including disagreements with management, among other matters .

4. To obtain from those charged with governance information relevant to the audit. The audit committee or others charged with governance, such as the full board of directors, may share strategic decisions that may affect the nature and timing of the auditor's procedures.

Communications about significant findings arising during the audit are normally made in writing. Communications about other matters may be made orally or in writing, with all oral communications documented in the audit files. Communications should be made timely to allow those charged with governance to take appropriate actions. Generally, communications about the auditor's responsibilities and the audit scope and timing occur early in an audit, while communications about significant findings usually occur throughout the entire engagement period.

The Sarbanes–Oxley Act of 2002 includes additional communication requirements for auditors of public

companies. For example, auditors must communicate all alternative treatments of financial information within requirements of accounting standards that have been discussed with management, ramifications of the alternative disclosures and treatments, and the treatment preferred by the auditor. As the audit is completed, the auditor should determine that the audit committee is informed about the initial selection of and changes in significant accounting policies or their application during the current audit period, as well as the reasons for any changes. The auditor should also communicate information about methods used to account for any significant unusual transactions and the effect of significant accounting policies in controversial or emerging areas.

Management Letters

A management letter is intended to inform client personnel of the CPA's recommendations for improving any part of the client's business. Most recommendations focus on suggestions for more efficient operations. The combination of the auditor's experience in various businesses and a thorough understanding gained in conducting the audit places the auditor in a unique position to provide assistance to management. Many CPA firms write a management letter for

every audit to demonstrate to management that the firm adds value to the business beyond the audit service provided. Their intent is to encourage a better relationship with management and to suggest additional tax and permitted management services that the CPA firm can provide.

A management letter differs from a letter reporting significant deficiencies in internal control. The latter is required when there are significant deficiencies or material weaknesses in internal control, and must follow a prescribed format and be sent in accordance with the requirements of auditing standards. A management letter is optional and is intended to help the client operate its business more effectively.

Each management letter should be developed to meet the style and preferences of the CPA firm and the needs of the client. Some auditors combine the management letter with the letter about significant deficiencies and material weaknesses. On smaller audits, it is common for the auditor to communicate operational suggestions orally rather than by a management letter.

SUBSEQUENT DISCOVERY OF FACTS

After the auditor issues the audit report and completes all communications with management and the audit committee,

the audit is finished. Usually, the next major contact between the auditor and client occurs when the planning process of the next year's audit begins.

Although it rarely happens, auditors sometimes learn after the audited financial statements have been issued that the financial statements are materially misstated. Examples are the inclusion of material nonexistent sales, the failure to write off obsolete inventory, or the omission of an essential footnote. Similarly, following the issuance of a report on internal control over financial reporting as part of an integrated audit, an auditor may become aware of conditions that existed at the date of the report that would have changed their opinion had they been aware of those conditions.

When this subsequent discovery of facts occurs, the auditor has an obligation to make certain that users who are relying on the financial statements are informed about the misstatements or change in the conclusion on the effectiveness of internal controls. (If the auditor had known about the misstatements before the audit report was issued, the auditor would have insisted that management correct the misstatements or, alternatively, a different audit report would have been issued.) It does not matter whether the failure to discover the misstatement or material weakness was the fault

of the auditor or the client. In either case, the auditor's responsibility remains the same. Although subsequent discovery of facts is not part of completing the audit, it is included in this chapter because it is easier to understand in this context.

If the auditor discovers that the statements are misleading after they have been issued, the most desirable action is to request that the client issue an immediate revision of the financial statements that includes an explanation of the reasons for the revision. If a subsequent period's financial statements are completed before the revised statements would be issued, it is acceptable to disclose the misstatements in the subsequent period's statements. When pertinent, the client should inform the SEC and other regulatory agencies of the misstated financial statements. The auditor is responsible to make certain that the client has taken the appropriate steps to inform users of the misstated statements.

If the client refuses to disclose the misstated statements, the auditor must inform the board of directors. The auditor must also notify regulatory agencies having juris-diction over the client that the statements are no longer fairly stated and also, when practical, each person who relies on the financial

statements. If the stock is publicly held, it is acceptable to request the SEC and the stock exchange to notify stockholders.

The subsequent discovery of facts requiring the recall or reissuance of financial statements arises only from business events that existed before the date of the auditor's report. For example, a revision of the financial statements is not required if an account receivable is believed to be collectible after an adequate review of the facts at the date of the audit report, but the customer subsequently files bankruptcy. If the customer had filed for bankruptcy before the audit report date, however, there is a subsequent discovery of facts.

The auditor's responsibility for subsequent events review ends on the date of the completion of the field work. Auditors have no responsibility to search for subsequent facts, but if they discover that issued financial statements are incorrectly stated, they must take action to correct them. In most cases, subsequent discovery of facts occurs when auditors discover a material misstatement in issued financial statements during the subsequent year's audit, or when the client reports a misstatement to the auditor.

MULTIPLE CHOICE QUESTIONS FROM CPA EXAMINATIONS

1 . The audit step most likely to reveal the existence of contingent liabilities is

(a) a review of vouchers paid during the month following the year-end.

(b) mortgage-note confirmation.

(c) accounts payable confirmations.

(d) an inquiry directed to legal counsel.

2 . When a contingency is resolved subsequent to the issuance of audited financial statements, which correctly contained disclosure of the contingency in the footnotes based on information available at the date of issuance, the auditor should

(a) take no action regarding the event.

(b) insist that the client issue revised financial statements.

(c) inform the audit committee that the report cannot be relied on.

(d) inform the appropriate authorities that the report cannot be relied on.

3 . Which of the following would be least likely to be included in a standard inquiry to the client's attorney?

(a) A list provided by the client of pending litigation or asserted or unasserted claims with which the attorney has had some involvement.

(b) A request for the attorney to opine on the correct accounting treatment associated with an outstanding claim or pending lawsuit outcome.

(c) A request that the attorney provide information about the status of pending litigation.

(d) A request for the attorney to identify any pending litigation or threatened legal action not identified on a list provided by the client.

4 . Which of the following is not a required item to be communicated by the auditor to the audit committee or others charged with governance?

(a) Information about the auditor’s responsibility in an audit of financial statements.

(b) Information about the overall scope and timing of the audit.

(c) Recommendations for improving the client’s business.

(d) Significant findings arising from the audit.

5 . Written management representations obtained by the auditor in connection with a financial statement audit should include a

(a) summary of all corrected misstatements.

(b) statement of management's belief that any uncorrected misstatements are in fact not misstatements.

(c) statement of management's belief that the effects of uncorrected misstatements are not material.

(d) summary of all uncorrected misstatements.

6. A management letter

(a) is the auditor's report on significant deficiencies and material weaknesses in internal control.

(b) contains recommendations from the auditor designed to help the client improve the efficiency and effectiveness of its business.

(c) is mandatory in all audits and must be dated the same date as the audit report.

(d) contains management's representations to the auditor documenting statements made by management to the auditor during the audit about matters affecting the financial statements.

7. An audit report was dual-dated for a subsequent event disclosed in the financial statements, which occurred after the completion of the evidence collection process but before the issuance of the financial statements. The auditor's

responsibility for events occurring subsequent to the completion of the evidence collection process was

(a) limited to include only events occurring before the date of the last subsequent event referred to.

(b) extended to subsequent events occurring through the date of issuance of the financial statements.

(c) limited to the specific events referred to.

(d) extended to include all events occurring since the completion of the evidence collection process.

8 . Subsequent events for reporting purposes are defined as events that occur subsequent to the

(a) balance sheet date but before the date of the auditor's report.

(b) date of the auditor's report.

(c) balance sheet date.

(d) date of the auditor's report and concern contingencies that are not reflected in the financial statements.

9 . An example of an event occurring in the period of the auditor's field work subsequent to the end of the year being audited that normally will not require disclosure in the financial statements or auditor's report is

(a) serious damage to the company's plant from a widespread flood.

(b) issuance of a widely advertised capital stock issue with restrictive covenants.

(c) settlement of a large liability for considerably less than the amount recorded.

(d) decreased sales volume resulting from a general business recession.

10 . The Form 10-K filed by management of a public company includes a section on management's discussion and analysis (MD&A) in addition to the annual financial statements. Which of the following best describes the auditor's responsibility for the MD&A information?

(a) The auditor must perform sufficient appropriate audit procedures to opine on the MD&A information.

(b) The auditor has no responsibilities related to the MD&A disclosures.

(c) The auditor must read the MD&A information to determine if there is any material inconsistency with the audited financial statements.

(d) The auditor must provide a disclaimer of opinion related to the MD&A information.

11. Management of Thurman Corporation included additional supplementary information in documents that include the audited financial statements for the year ended

December 31, 2013. Management has asked its audit firm, Wally, CPAs, whether they can report on the supplementary information. Which of the following conditions would preclude Wally, CPAs, from conducting this engagement?

(a) The supplementary information is derived from the accounting records used to generate the basic financial statements.

(b) The supplementary information covers the period January 1, 2013, through February 15, 2014.

(c) Wally's opinion of the basic financial statements was unqualified.

(d) When evaluating supplementary information, Wally plans to use the same materiality threshold as that used in the audit of the basic financial statements.

12. Investment and property schedules are presented for purposes of additional analysis in a document outside the basic financial statements. The schedules are not required supplementary information. When the auditor is engaged to report on whether the supplementary information is fairly stated in relation to the audited financial statements as a whole, the measurement of materiality is the

(a) greater of the individual schedule of investments or schedule of property by itself.

(b) lesser of the individual schedule of investments or schedule of property by itself.

(c) same as that used in forming an opinion on the basic financial statements as a whole.

(d) combined total of both the individual schedules of investments and property as a whole.

Chapter (4)

OTHER ASSURANCE SERVICES

REVIEW AND COMPILATION SERVICES

Many nonpublic companies have their financial statements reviewed or compiled by a CPA, instead of having them audited. The opening story about Barnhart Construction Company is an example of a review service. A company's management may believe that an audit is unnecessary because no bank or regulatory agency requires one and management sees no need for audited statements for internal use. Instead, the company may engage the CPA to assist in the preparation of financial statements, either for internal use or to provide to creditors or lenders under loan agreements. Depending on the size of the loan, a lender may require compiled or reviewed financial statements, rather than an audit. A review provides limited assurance on the financial statements, whereas a compilation provides no expressed assurance.

The standards for compilations and reviews of financial statements, called Statements on Standards for Accounting and Review Services (SSARS), are issued by the Accounting and Review Services Committee of the AICPA. This committee has authority equivalent to the Auditing Standards Board for services involving unaudited financial statements of nonpublic companies. Because they are not doing audits,

SSARS refer to CPAs performing review and compilation services as accountants, not auditors.

Because the assurance provided by compilations and reviews is considerably below that of audits, less evidence is required for these services and they can be provided at a lower fee than an audit. The amount of evidence and assurance needed for each engagement is not defined by the profession and therefore depends on the accountant's judgment.

Because review and compilation services provide less assurance than audits, the accountant should establish an understanding with the client about the services to be provided through a written engagement letter. The understanding should include a description of the objectives of the engagement, management's responsibilities, the accountant's responsibilities, the type and limitations of the service to be provided, and a description of the compilation or review report expected to be issued. The requirements for review and compilation services are now discussed in greater detail.

Review Services

A review service (SSARS review) engagement allows the accountant to express limited assurance that the financial statements are in accordance with applicable accounting

standards, including appropriate informative disclosures, or other comprehensive basis of accounting (OCBOA), such as the cash basis of accounting. CPAs must be independent of the client for review service engagements.

Procedures Suggested for Reviews The evidence for a review engagement consists primarily of inquiries of management and analytical procedures, substantially fewer procedures than those required for an audit. For reviews, accountants do not obtain an understanding of internal control, test controls, assess fraud risk, or do substantive tests of transactions or tests of balances, such as confirmation of receivables or physical examination of inventory.

SSARS require the accountant to obtain evidence that consists of the following for a review engagement:

- Obtain knowledge of the accounting principles and practices of the client's industry. The accountant can study AICPA industry guides or other sources to obtain industry knowledge. The level of knowledge for reviews can be somewhat less than for an audit.
- Obtain knowledge of the client. The information should be about the nature of the client's business transactions, its ownership structure, key personnel, accounting records and employees, the accounting principles

and practices used by the client, and the content of the financial statements. The level of knowledge can be less than for an audit.

- Make inquiries of management. Inquiry is the most important review procedure. The objective is to determine whether the financial statements are fairly presented, assuming that management does not intend to deceive the accountant. Inquiries must be made of the appropriate client personnel and typically involve discussions, such as the following illustrative inquiries:

1. Describe the accounting standards framework used to develop the financial statements, including your procedures for recording, classifying, and summarizing transactions and disclosing information in the statements.
2. What unusual or significant transactions occurred this year, including important actions taken at meetings of stockholders and the board of directors?
3. Is each account on the financial statements prepared in conformity with accounting standards and consistently applied?
4. Do you have knowledge of an actual or suspected fraud, communications from regulatory agencies, subsequent

events, or actions taken by those charged with governance that might materially impact the financial statements?

- Perform analytical procedures. Based on the accountant's understanding of the industry and knowledge of the client, the accountant designs and performs analytical procedures. These identify relationships and individual items that appear to be unusual. As unusual trends are noted, the accountant engages in further inquiries with client personnel to obtain explanations for any unexpected relationships.
- Read the financial statements. The accountant should read the financial statements to determine whether they conform with the financial reporting framework, such as GAAP, IFRS, or OCBOA. The reading of the financial statements may identify items such as headings or section titles in the financial statements that are not consistent with the accounting framework used, arithmetical errors, clerical mistakes, or omitted disclosures.
- Obtain letter of representation. The accountant is required to obtain a letter of repre sentation from members of management who are knowledgeable about financial matters.
- Prepare documentation. The accountant should prepare documentation that is sufficient in detail to provide a clear understanding of the work performed, the review evidence

obtained and its source, and the conclusions reached. Docu¬mentation should include the engagement letter, analytical procedures performed, significant matters covered in the inquiries with management, significant findings and issues, communications with management or others regarding possible fraud, and the representation letter.

These procedures ordinarily provide a reasonable basis for obtaining limited assurance. However, in some instances, the accountant may become concerned that information is incorrect, incomplete, or otherwise unsatisfactory. If so, additional procedures should be performed to obtain limited assurance before the accountant issues a standard review services report.

Form of Report, Figure 1 provides an example of the review report when the accountant has completed a review engagement and decides that no material changes to the financial statements are needed. In addition to the required report title, the standard review report includes four paragraphs that include the following:

1. Similar to the audit report, the first paragraph explicitly notes that the accountant has conducted a review and identifies the entity and period of financial statements subject to the review. The first paragraph also includes a

statement that a review primarily consists of analytical procedures and inquiries and is substantially less in scope than an audit.

2. The second paragraph specifies that management is responsible for the preparation and fairness of the financial statements and for designing, implementing, and maintaining internal controls relevant to financial reporting.

3. The third paragraph notes that the accountant's responsibility is to conduct a review of management's financial statements in accordance with SSARS and that those standards require the accountant to perform procedures to obtain limited assurance that there are no material modifications that should be made to the financial statements.

4. The fourth paragraph expresses limited assurance in the form of negative assurance that "we are not aware of any material modifications that should be made to the accompanying financial statements" in order for them to be in conformity with applicable accounting standards.

The date of the review report should be the date on which the accountant has accumulated review evidence sufficient to provide a reasonable basis for the report conclusion. Each

page of the financial statements reviewed should include the reference “See independent accountant’s review report.”

Figure 1-Example of Review Report

INDEPENDENT ACCOUNTANT’S REVIEW REPORT

We have reviewed the accompanying balance sheet of AAA, Inc., as of December 31, 2021, and the related statements of income, retained earnings, and cash flows for the year then ended. A review includes primarily applying analytical procedures to management’s financial data and making inquiries of company management. A review is substantially less in scope than an audit, the objective of which is the expression of an opinion regarding the financial statements as a whole. Accordingly, we do not express such an opinion.

Management is responsible for the preparation and fair presentation of the financial statements in accordance with accounting principles generally accepted in the United States of America and for designing, implementing, and maintaining internal control relevant to the preparation and fair presentation of the financial statements.

Our responsibility is to conduct the review in accordance with Statements on Standards for Accounting and Review Services issued by the *American Institute of Certified* Public *Accountants. Those standards require us to perform*

procedures to obtain limited assurance that there are no material modifications that should be made to the financial statements. We believe that the results of our procedures provide a reasonable basis for our report.

Based on our review, we are not aware of any material modifications that should be *made to the accompanying financial statements in order for them to be in conformity with accounting principles generally accepted in the United* States *of America.*

Failure to Follow Applicable Accounting Framework If a client has failed to follow applicable accounting standards in a review engagement, the report must be modified. (Accounting standards are the same for all historical financial statements, including reviews.) The report should disclose the effects of the departure as determined by management or the accountant's review procedures. Even if the effects have not been determined, the disclosure must appear in the report in a separate paragraph. The following provides an example of suggested wording:

As disclosed in note Y to the financial statements, accounting principles generally accepted in the United States of America require that land be stated at cost. Management has informed *us that the company has stated its land at*

appraised value and that, if accounting principles generally accepted in the United States of America had been followed, the land account and stockholders equity *would have been decreased by $1000,000.*

Compilation Services

A compilation service engagement is defined in SSARS as one in which accountants Compilation Services prepare financial statements and present them to a client or third party without providing any CPA assurance about those statements. Many CPA firms prepare monthly, quarterly, or annual financial statements for their clients. These statements are usually for internal use by management, although they may also be provided to external users.

The CPA is not required to be independent to perform a compilation and the financial statements can be issued without additional disclosures such as footnotes. When accountants submit financial statements and expect them to be used by a third party, they are required to, at least, issue a compilation report that accompanies the statements. It is not permissible for the accountant to prepare and present financial statements to a client that plans to provide them to external users without, at a minimum, having satisfied the requirements for a compilation engagement, including the

issuance of a compilation report. When the accountant does not expect the financial statements to be used by a third party, the CPA does not have to issue a compilation report, as long as the CPA documents in the engagement letter with the client an understanding regarding the services to be performed and a restriction that the financial statements are for management's use only.

Requirements for Compilation

Compilation does not absolve accountants of responsibility, as they are always responsible for exercising due care in performing all duties. In a compilation engagement, an accountant must accomplish the following:

- Establish an understanding with the client in a written engagement letter about the objectives of the engagement, type and limitations of the services to be provided including acknowledgement that the accountant does not obtain any assurance about the financial statements, and a description of the report, if a report is to be issued.
- Possess knowledge about the accounting principles and practices of the client's industry.
- Know the client, including a general understanding of the client's organization, the nature of its business transactions, accounting principles and practices used by the

client, and content of its financial statements (the knowledge can be less than that for a review).

- Make inquiries to determine whether the client's information is satisfactory.
- Read the compiled financial statements and be alert for any obvious omissions or errors in arithmetic and in the application of accounting standards.
- Prepare documentation in sufficient detail to provide a clear understanding of the work performed and any findings or issues that are significant, including any communications with management regarding fraud or illegal acts that came to the accountant's attention.

Accountants do not have to make other inquiries or perform other procedures to verify information provided by client personnel. But if they become aware that the statements are not fairly presented, they should obtain additional information. If the client refuses to provide the information, the accountant should withdraw from the compilation engagement.

Form of Report SSARS define three types of compilation reports. The use of each depends on whether management elects to include all the required disclosures with the

financial statements and whether the accountant is independent.

1. Compilation with full disclosure. A compilation of this type requires disclosures in accordance with accounting standards, the same as for audited financial statements or reviews.

2. Compilation that omits substantially all disclosures. Figure 2 shows the appropriate wording that the accountant adds after the conclusion paragraph of the standard compilation report when the accountant compiles statements without disclosures. In this example, management has also elected not to present the statement of cash flows. This type of compilation is acceptable if the report indicates the lack of disclosures and the absence of disclosures is not, to the CPA's knowledge, undertaken with the intent to mislead users. Typically, this type of statement is used primarily for management purposes.

Figure 2-Compilation That Omits Substantially All Disclosures

Management has elected to omit substantially all of the disclosures and the statement of cash flows required by accounting principles generally accepted in the United States of America. If the omitted disclosures were included in the

financial statements, they might influence the user's conclusions about the company's financial position, results of operations, and cash flows. Accordingly, the financial statements are not designed for those who are not informed about such matters.

3. Compilation without independence. A CPA firm can issue a compilation report with full or omitted disclosures even if it is not independent of the client, as defined by the Code of Professional Conduct. When the accountant lacks independence, an additional paragraph must be added as the last paragraph of the report that states: "We are not independent with respect to Williams Company."

For all three types of compilation reports, the following elements are also required:

- A report title that says "Accountant's Compilation Report."
- The date of the accountant's report is the date of completion of the compilation.
- Each page of the financial statements compiled by the accountant should state "See accountant's compilation report."

- If the client fails to follow accounting standards, the auditor must include the same modifications in the compilation report that are used in a review report.

REVIEW OF INTERIM FINANCIAL INFORMATION FOR PUBLIC COMPANIES

The SEC requires that quarterly financial statements be reviewed by the company's external auditor prior to the company's filing of the Form 10-Q with the SEC. The SEC also requires a footnote in the annual audited financial statements disclosing quarterly sales, gross profit, income, and earnings per share for the past two years. Typically, the footnote in the annual statements is labeled unaudited. At a minimum, the CPA firm must perform review procedures of the footnote information. Because the same CPA firm does both the annual audit and the public company interim financial statement review, they are referred to as auditors, not accountants for the interim review.

Like reviews under SSARS, a public company interim review includes five requirements for review service engagements. The auditor must: (1) obtain knowledge of the accounting principles of the client's industry, (2) obtain knowledge of the client, (3) make inquiries of management,

(4) perform analytical procedures, and (5) obtain a letter of representation.

Also like SSARS reviews, reviews for public companies do not provide a basis for expressing positive opinion level assurance. Ordinarily, auditors perform no tests of the accounting records, independent confirmations, or physical examinations. However, the two types of reviews differ in several areas. Below are the key differences:

- Because an annual audit is also performed for the public company client, the auditor must obtain sufficient information about the client's internal control for both annual and interim financial information.
- Similarly, because the client is audited annually, the auditor's knowledge of the results of these audit procedures is used in considering the scope and results of the inquiries and analytical procedures for the review.
- Under SSARS, the auditor makes inquiries about actions taken at directors' and stock holders' meetings; for a public company, the auditor reads the minutes of those meetings.
- The auditor must also obtain evidence that the interim financial information agrees or reconciles with the accounting records for a public company interim review. For

example, the auditor might compare the interim financial information to the general ledger.

A public company interim review is performed following standards of the PCAOB and the review report makes no reference to SSARS. Each page of the interim financial information which accompanies the report should be clearly marked as "unaudited."

If the auditor determines the interim statements violate accounting standards, the report should be modified. . The language of the modification is similar to that used in a review under SSARS, except that the auditor should state the effect of the departure, if the amount can be determined.

The quarterly data reviewed by the auditor and included as a footnote in the annual audited statements should be labeled "unaudited." However, a separate review report for this information is not required.

ATTESTATION ENGAGEMENTS

assurance services consider an independent professional services that improve the quality of information for decision makers. Individuals who are responsible for making business decisions seek assurance services to help improve the reliability and relevance of the information on which they

base their decisions. One category of assurance services provided by CPAs is attestation services.

CPAs have increasingly been asked to perform a variety of audit-like services, known as attest services, for different purposes. In an attestation engagement, the CPA reports on the reliability of information or an assertion made by another party. An example is when a bank requests a CPA to report in writing whether an audit client has adhered to all requirements of a loan agreement.

The AICPA has issued 11 attestation standards that are stated in sufficiently general terms to enable CPAs to apply them to any attestation engagement, including new types of engagements that may arise. These standards, closely parallel the principles underlying an audit in accordance with AICPA auditing standards and the PCAOB's 10 generally accepted auditing standards.

The most notable differences in the attestation standards and the PCAOB's 10 GAAS are in general attestation standards 2 and 3. Standard 2 requires that the CPA have adequate knowledge of the subject matter over which there is attestation. For example, for CPAs to attest to a company's compliance with environmental protection laws, they need a thorough knowledge of the laws and methods that companies

use to assure compliance. Standard 3 requires that the CPA be able to evaluate the subject matter against criteria that are suitable and available to users. Again, using the example of environmental protection laws, measurement difficulties or the lack of specific criteria may make it difficult for the CPA to conclude whether there is compliance.

To provide additional guidance for doing attestation engagements, the Auditing Standards Board of the AICPA issues Statements on Standards for Attestation.

Engagements (SSAE). These are normally called attestation standards. The Auditing Standards Board attempts to distinguish between issues that should be addressed by auditing standards and those that should be addressed by attestation standards, even though both are attestations. In general, auditing standards apply to attestations that deal with providing assurance on historical financial statements, including one or more parts of those statements. These may include audits of financial statements prepared in accordance with accounting standards or some other comprehensive basis of accounting, audits of only a balance sheet, and audits of individual accounts. All other forms of attestation are addressed in the attestation standards (an exception is reviews of historical financial statements of a nonpublic

entity, which are addressed in SSARS). Attestation standards are established by the Auditing Standards Board following the same process used for auditing standards. (Attestation standards are labeled as AT rather than AU-C.)

Types of Attestation Engagements

The Auditing Standards Board decided not to attempt to define the potential boundaries of attestation engagements except in conceptual terms because new services are likely to arise. For example, PricewaterhouseCoopers has been attesting to the balloting for the Miss America contest for decades, but attesting to compliance with environ mental protection laws started only in recent years.

The AICPA has developed specific attestation standards to address specific types of engagements. For example, there are standards related to engagements to compile or examine prospective financial statements or to report on internal controls at service organizations.

Levels of Service

The attestation standards define three levels of engagements and related forms of conclusions:

1. Examinations
2. Reviews
3. Agreed-upon procedures

In addition, compilation engagements are defined for prospective financial statements.

An examination results in a positive conclusion, which is expressed by the CPA in the form of an opinion. In this type of report, the CPA makes a direct statement about whether the presentation of the assertions, taken as a whole, conforms to the applicable criteria. A report on an examination is unrestricted as to distribution by the client after it is issued. This means that a client can distribute the information widely, including to prospective investors, and for sales and marketing purposes.

In a review, the CPA provides a moderate level of assurances that is expressed by the CPA in the form of a negative assurance conclusion. For a negative assurance report, the CPA's report states whether any information came to the CPA's attention to indicate that the assertions are not presented in all material respects in conformity with the applicable criteria. A review report is also unrestricted in its distribution. Review engagements are prohibited for most services where specified attestation standards have been issued, such as prospective financial statements, because of the difficulty of setting standards for the limited assurance provided by reviews.

In an agreed-upon procedures engagement, all procedures the CPA will perform are agreed upon by the CPA, the responsible party making the assertions, and the specific persons who are the intended users of the CPA's report. The degree of assurance included in such a report varies with the specific procedures agreed to and performed. Accordingly, such reports are limited in their distribution to only the involved parties, who know the procedures the CPA will perform and the level of assurance resulting from them. The report should include a statement of what procedures management and the CPA agreed to and what the CPA found in performing the procedures.

Next we discuss four common types of engagements for which detailed attestation standards have been issued: WebTrust and SysTrust services, reports on controls at service organizations, prospective financial statements, and agreed-upon procedures.

WEBTRUST AND SYSTRUST SERVICES

Most organizations rely heavily on the use of information technologies to conduct business, including the use of the Internet to buy and sell goods and services. As more reliance is placed on information systems, businesspeople often demand greater assurances about their accuracy, availability,

and security. WebTrust and SysTrust are examples of attestation services developed to address these assurance needs. CPAs must obtain a specific license to perform either service.

In a WebTrust attestation engagement, a client engages a CPA to provide reasonable assurance that a company's Web site complies with certain Trust Services principles and criteria for one or more aspects of e-commerce activities. A site that meets the Trust Services principles is eligible to display the W Trust Services e bTr u s t electronic seal on its transaction or order page, which is intended to give users of the site assurance about the site's credibility. At least once every 12 months, the CPA firm updates its testing of the e-commerce aspects to ensure that the client's site continues to comply with the Trust Services principles and criteria. The CPA firm also updates its report. If the site does not comply, the seal can be revoked.

The **WebTrust service** is a specific service developed under the broader Trust Services principles and criteria jointly issued by the AICPA and CICA. When performing WebTrust assurance services, the CPA firm assesses whether the company's Web site complies with the five Trust Services principles. These Trust Services principles represent broad

statements of objectives. To provide more specific guidance, there are related Trust Services criteria for each of the five principles. A company must conform to these criteria to obtain and maintain its WebTrust seal.

SysTrust Services

As organizations become more dependent on information technology, the security, availability, and accuracy of computer systems are critical. The SysTrust service provides assurance to management, the board of directors, or third parties about the reliability of information systems used to generate real-time information.

In a SysTrust engagement, the SysTrust licensed CPA evaluates a company's computer system using Trust Services principles and criteria and determines whether controls over the system exist. The CPA then performs tests to determine whether those controls were operating effectively during a specified period. If the system meets the requirements of the Trust Services principles and criteria, an examination-level unqualified attestation report is issued under AICPA attestation standards. The report may address a single Trust Services principle or any combination of Trust Services principles.

that many clients outsource some or all of their IT needs to an independent computer service organization rather than maintain an internal IT function or data center. In those situations, the auditor faces difficulty when obtaining an understanding of the client's internal control over financial reporting because many of the controls reside at the service organization, and the auditor cannot assume that the controls are adequate because they are provided by an independent IT provider. It has become increasingly common for the service center to engage a CPA firm to obtain an understanding and test internal controls of the service organization and issue a report for use by all customers and their independent auditors.

These engagements have historically been referred to as SAS 70 engagements because the guidance for service auditors was contained in that auditing standard. The guidance for service auditors has been moved to the attestation standards, while guidance for user auditors remains in the auditing standards. The attestation standards provide guidance for service auditors who are engaged by a service organization to issue one of two types of reports on controls at the service

organization relevant to user entities' internal control over financial reporting:

1. Report on management's description of a service organization's system and the suitability of the design of controls (referred to as a Type 1 report).
2. Report on management's description of a service organization's system and the suitability of the design and operating effectiveness of controls (referred to as a Type 2 report).

In a Type 1 report, the service auditor expresses an opinion about the fairness of the description of the service organization's system and an opinion about the suitability of the design of controls in that system. The service auditor obtains and reads the system description prepared by the organization's management and assesses whether the description is fairly presented. In making that assessment, the service auditor evaluates whether management used suitable criteria in preparing and presenting the service organization's system description. For example, the service auditor would evaluate whether the organization's description includes information about procedures by which transactions are initiated, authorized, recorded, processed, corrected, and

reported for user entities and the related accounting records prepared to support those processes.

In a Type 1 engagement, the service auditor also performs procedures to obtain sufficient available evidence to obtain reasonable assurance about the suitability of the design of controls. In making that determination, the service auditor evaluates whether controls have been designed to address risks threatening the achievement of control objectives and whether those controls, if operating as described, provide reason able assurance that those risks would not prevent achievement of control objectives.

In a Type 2 engagement, the service auditor performs tests of the operating effectiveness of the controls at the service organization, in addition to procedures performed in the Type 1 engagement. The service auditor's Type 2 report contains the two opinions about the description and suitability of the design of controls that are provided in a Type 1 report, plus an additional opinion about the operating effectiveness of controls throughout the period.

Service organizations provide a number of other IT services for entities that may not relate to internal controls over financial reporting. For example, a university that outsources the processing of student applications for admission will

likely be subject to laws requiring the university to maintain the privacy of the information included in the application. The university is concerned about the accuracy of that information and is responsible for maintaining the privacy of the information including that residing at the service organization. Management of the university is also concerned about complying with laws or regulations related to processing integrity and privacy and may desire assurance about the service organization's controls relevant to processing integrity and privacy that affect the users' information. The service auditor uses the criteria in T r u s t S e r v i c e s Principles for evaluating and reporting on controls related to security, availability, processing integrity, confidentiality, or privacy. The controls that the CPA reports on in these engagements are intended to prevent, or detect and correct, errors or other negative events that affect the service or information provided to user entities, as they relate to the principle being reported on.

PROSPECTIVE FINANCIAL STATEMENTS

As implied by the term, prospective financial statements refer to predicted or expected financial statements in some future period (income statement) or at some future date (balance

sheet). An example is management's predictions of the income statement and balance sheet one year in the future.

Most CPAs believe there are significant opportunities and potential risks for auditors to provide credibility to prospective financial information. It is widely accepted that users want reliable prospective information to aid their decision making. If auditors can improve the reliability of the information, information risk may be reduced in the same way it is in audits of historical financial statements. The risks arise because the actual results obtained in the future may differ significantly from the results predicted in the prospective financial statements. Regulators, users, and others may criticize and even sue auditors, even if the prospective statements were fairly stated, given the information available when they were prepared.

Forecasts and Projections

AICPA attestation standards define two general types of prospective financial statements:

1. Forecasts are prospective financial statements that present an entity's expected financial position, results of operations, and cash flows, to the best of the responsible party's knowledge and belief. Banks commonly require this information as a part of loan applications.

2. Projections are prospective financial statements that present an entity's financial position, results of operations, and cash flows, to the best of the responsible party's knowledge and belief, given one or more hypothetical assumptions. For example, projected financial statements might assume the company is able to increase the price of its primary product by 10 percent with no reduction in units sold.

Considerable guidance is provided in the AICPA Guide for Prospective Financial Statements, which includes criteria against which an attestation engagement can be compared.

Use of Prospective Financial Statements

Prospective financial statements are prepared for one of two audiences:

1. General use statements are prepared for use by any third party, such as the inclusion of a financial forecast in a prospectus for the sale of hospital bonds.

2. Limited use statements are prepared solely for third parties with whom the responsible party is dealing directly, such as the inclusion of a financial projection in a bank loan application document.

Forecasts can be provided for both general and limited use. However, projections are restricted to the latter, because

limited users are in a better position to understand the prospective statements and related assumptions than other parties. For example, a potential venture capital investor can ask the responsible party about hypothetical assumptions in a projection, whereas a removed user, such as a reader of a company prospectus, cannot. Because general users may have difficulty interpreting hypothetical assumptions without obtaining additional information, the standards prohibit their general use. There is an exception to this rule: a projection may be issued as a supplement to a forecast for general use.

Types of Engagements

AICPA attestation standards prohibit a CPA firm from performing a review of a forecast or projection, because a review service implies the CPA can be "moderately satisfied" about both the computational accuracy of the projections and the assumptions on which the projection is based. To avoid confusion among users, the AICPA created more specific attestation standards, prescribing the following types of engagements for prospective financial statements:

- An examination engagement in which the CPA obtains satisfaction as to the completeness and reasonableness of all the assumptions.

- A compilation engagement in which the CPA is primarily involved with the computational accuracy of the statements, and not the reasonableness of the assumptions.
- An agreed-upon procedures engagement in which the CPA and all users of the statements agree on specific, limited attestation procedures.

Examination of Prospective Financial Statements

In an examination level engagement, the CPA:

1. Evaluates the preparation of the prospective financial statements
2. Evaluates the support underlying the assumptions
3. Evaluates the presentation of the prospective financial statements for conformity with AICPA presentation guidelines
4. Issues an examination report

The CPA is not attesting to the accuracy of the prospective financial statements. Instead, the CPA is accumulating evidence about the completeness and reasonableness of the underlying assumptions, as disclosed in the prospective financial statements. To make the evaluation, the CPA needs to become familiar with the client's business and industry, identify the significant matters on which the client's future results are expected to depend ("key factors"), and determine

that appropriate assumptions have been included with respect to these key factors.

AGREED-UPON PROCEDURES ENGAGEMENTS

When the auditor and management or a third-party user agree that the engagement will be limited to certain specific procedures, it is referred to as an agreed-upon procedures engagement. Many CPAs refer to these as procedures and findings engagements because the resulting reports emphasize the specific procedures performed and the findings of those completed procedures.

Agreed-upon procedures engagements appeal to CPAs because management, or a third-party user, specifies the procedures they want done and then the CPA issues a report describing the procedures agreed upon and the findings resulting from the procedures. Imagine the difficulty a CPA firm faces if it is asked to issue an opinion to a federal agency that a company complied with federal affirmative action laws for a 2-year period under compliance attestation standards. Now assume that the federal agency is willing to specify 10 specific procedures the CPA firm will do to satisfy the agency. Obviously, the latter engagement will be much easier to manage. Assuming the CPA firm and federal agency can agree on the procedures, many CPA firms are

willing to perform the procedures and issue a report of the related findings. Other agreed-upon procedures engagements might involve a CPA calculating internal rates of return and beta risk for measuring volatility for a mutual fund or gross sales amounts used to compute rent under a store lease for a retail firm.

OTHER AUDITS OR LIMITED ASSURANCE ENGAGEMENTS

Now that we have discussed compilation and review services for nonpublic companies, as well as reviews of interim financial information for public companies, we will examine other types of audit and attestation services that fall within the auditing standards but are not audits of historical financial statements in accordance with GAAP or IFRS. Some of these services include: audits of financial statements prepared on another comprehensive basis of accounting (OCBOA); audits of specified elements, accounts, or items; and debt compliance letters.

Other Comprehensive Basis of Accounting

Auditors often audit statements prepared on a basis other than GAAP or IFRS. Auditing standards apply to these audit engagements, but the reporting requirements differ. Bases

other than GAAP or IFRS for which reports may be issued include:

- Cash or modified cash basis. With cash basis accounting, only cash receipts and disbursements are recorded. Under the modified cash basis of accounting, the cash basis is followed except for certain items, such as fixed assets and depreciation. Physicians and attorneys often follow this accounting method.
- Basis used to comply with the requirements of a regulatory agency. Common examples include the uniform system of accounts required of railroads, utilities, and some insurance companies.
- Income tax basis. The same measurement rules used for filing tax returns are often used for financial statement preparation, even though this is not in accordance with GAAP or IFRS. Many small businesses use this method.
- A definite set of criteria having substantial support. An example is the price-level basis of accounting. The method of accounting must be applied to all material items in the financial statements.

Auditors usually do these audits in the same way as when clients follow GAAP or IFRS. Naturally, the auditor must fully understand the accounting basis that the client is

required to follow. For example, in auditing a railroad, complex accounting requirements require the auditor to have specialized accounting knowledge to conduct the audit.

When clients follow a comprehensive basis other than GAAP or IFRS, the auditor must make sure the statements clearly indicate that they are prepared using another basis of accounting. If the statements imply that GAAP is followed. Consequently, terms such as balance sheet and statement of operations must be avoided by the client. Instead, a title such as "statement of assets and liabilities arising from cash transactions" is appropriate for a cash basis statement.

Specified Elements, Accounts, or Items

Auditors are often asked to audit and issue reports on specific aspects of financial statements. A common example is a report on the audit of sales of a retail store in a shopping center to be used as a basis for rental payments. Other common examples include reports on royalties, profit participation, and provision for income taxes. The authority for auditing specified elements, accounts, or items is in the auditing standards.

The audit of specified elements, accounts, or items is much like an ordinary audit of financial statements except it is applied to less than the full financial statements. Materiality

is defined in terms of the elements, accounts, or items being audited rather than for the overall statements. The effect is to ordinarily require more evidence than if the item being verified is just one of many parts of the statements. For example, if the sales account is being reported on separately, a smaller misstatement will be considered material than it is when sales are one of many accounts in a full financial statement audit.

Auditors must extend their audit efforts to include other elements, accounts, or items that are interrelated with those that are being audited. For example, in expressing an opinion on sales, the auditor must also consider the effect of accounts receivable on sales.

Debt Compliance Letters and Similar Reports

Clients occasionally enter into loan agreements that require them to provide the lender with a report from a CPA about the existence or nonexistence of some condition. For example, a bank may require a company to maintain a certain dollar amount of working capital at a specified date and to obtain an audit report that states whether the company complied with the stated working capital requirements.

Auditors may issue reports on debt compliance and similar engagements as separate reports or, by adding a paragraph

after the opinion paragraph, as part of a report that expresses their opinion on the financial statements. In either case, the auditor must observe the following matters in such engagements:

• Auditors must be qualified to evaluate whether the client has met the provisions in the engagement. In the audit of a debt compliance agreement, auditors are normally qualified to evaluate whether principal and interest payments were made when due, whether the proper limitations were maintained on dividends, working capital, and debt ratios, and whether the accounting records were adequate for conducting an ordinary audit. However, auditors are not qualified to determine whether the client has properly restricted its business activities to the requirements of an agreement or if it has title to pledged property. These are legal questions and the Code of Professional Conduct prohibits the auditor from practicing as an attorney in such circumstances.

• The auditor should provide a debt compliance letter only for a client for whom the auditor has done an audit of the overall financial statements. A debt compliance letter on a matter such as the existence of a current ratio of 2.5 or

better would be difficult to accomplish without having conducted a complete financial statement audit.

- The auditor's opinion is a negative assurance, stating that nothing came to the auditor's attention that would lead the auditor to believe there was noncompliance.

MULTIPLE CHOICE QUESTIONS FROM CPA EXAMINATIONS

The following are miscellaneous questions about compilation and review services. Choose the best response.

1 . A CPA is performing review services for a small, closely held manufacturing company. As a part of the follow-up of a significant decrease in the gross margin for the current year, the CPA discovers that there are no supporting documents for $40,000 of disbursements. The chief financial officer assures her that the disbursements are proper. What should the CPA do?

(a) Include the unsupported disbursements without further work in the statements on the grounds that she is not doing an audit.

(b) Modify the review opinion or withdraw from the engagement unless the unsupported disbursements are satisfactorily explained.

(c) Exclude the unsupported disbursements from the statements.

(d) Obtain a written representation from the chief financial officer that the disbursements are proper and should be included in the current financial statements.

2 . Which of the following best describes the responsibility of the CPA in performing compilation services for a company?

(a) The CPA has to satisfy only himself or herself that the financial statements were prepared in conformity with accounting standards.

(b) The CPA must understand the client's business and accounting methods and read the financial statements for reasonableness.

(c) The CPA should obtain an understanding of internal control and perform tests of controls.

(d) The CPA is relieved of any responsibility to third parties.

3 . The standard compilation report includes which statement or phrase?

(a) A compilation is substantially less in scope than a review or an audit.

(b) The accountant does not express an opinion but expresses only limited assurance on the compiled financial statements.
(c) The objective of a compilation is to assist management in presenting financial information in the form of financial statements.
(d) The accountant has compiled the financial statements in accordance with standards established by the Auditing Standards Board.

The following questions concern attestation engagements. Choose the best response.

4 . A Type 1 service auditor's report on internal controls at a service organization
(a) includes an opinion about the suitability of the design of controls at the service organization.
(b) is based on the performance of tests of controls and substantive tests of transactions at the service organization.
(c) contains an opinion about the operating effectiveness of internal controls at the service organization.
(d) provides an opinion about the fair presentation of the service organization's financial statements in accordance with accounting standards.

5 . Which of the following professional services would be considered an attestation engagement?
(a) Advocating on behalf of a client about trust tax matters under review by the Internal Revenue Service.
(b) Providing financial analysis, planning, and capital acquisition services as a part-time, in-house controller.
(c) Advising management in the selection of a computer system to meet business needs.
(d) Preparing the income statement and balance sheet for one year in the future based on client expectations and predictions.

The following questions concern reports issued by auditors, other than those on historical financial statements. Choose the best response.

6 . An auditor is reporting on cash basis financial statements. These statements are best referred to in the opinion of the auditor by which of the following descriptions?

(a) Cash receipts and disbursements and the assets and liabilities arising from cash transactions.

(b) Financial position and results of operations arising from cash transactions.

(c) Balance sheet and income statements resulting from cash transactions.

(d) Cash balance sheet and the source and application of funds.

7 . When asked to perform an audit to express an opinion on one or more specified elements, accounts, or items of a financial statement, the auditor

(a) may not describe auditing procedures applied.

(b) should advise the client that the opinion can be issued only if the financial statements have been audited and found to be fairly presented.

(c) may assume that the first standard of reporting with respect to GAAP does not apply.

(d) should comply with the request only if they constitute a major portion of the financial statements on which an auditor has disclaimed an opinion based on an audit

Chapter (5)

THE IMPACT OF INFORMATION TECHNOLOGY ON THE AUDIT PROCESS

Auditors cannot rely on information just because it is generated by a computer. People often assume "the information is correct because the computer produced it." Unfortunately, auditors sometimes depend on the untested accuracy of computer-generated output because they forget that computers perform only as well as they are programmed. Before concluding that computer-generated information is reliable, auditors must understand and test computer-based controls.

The use of IT improves internal control by adding new control procedures done by the computer and by replacing manual controls subject to human error. At the same time, IT introduces risks, which the client can manage by using controls specific to IT systems. In this chapter, we highlight risks specific to IT systems, identify controls that can be implemented to address those risks, and explain how IT-related controls affect the audit.

HOW INFORMATION TECHNOLOGIES IMPROVE INTERNAL CONTROL

Virtually all entities, including small, family-owned businesses, rely on IT to record and process business transactions. As a result of explosive advancements in IT, even relatively small businesses use personal computers with

commercial accounting software for their accounting. As businesses grow and have increased information needs, they typically upgrade their IT systems. The accounting function's use of complex IT networks, the Internet, and centralized IT functions is now commonplace. There are several benefits to internal control that result from the continued integration of IT in accounting systems:

-Computer controls replace manual controls. The obvious benefit of IT is the ability to handle large amounts of complex business transactions cost-effectively Because computers process information consistently, IT systems can potentially reduce misstatements by replacing manual procedures with automated controls that apply checks and balances to each processed transaction. This reduces the human errors that often occur in manually processed transactions.

Computers now do many internal control activities that once were done by employees, including comparing customer and product numbers with master files and comparing sales transaction amounts with preprogrammed credit limits. Online security controls in applications, databases, and operating systems can improve separation of duties, which reduces opportunities for fraud.

-Higher quality information is available. Complex IT activities are usually administered effectively because the complexity requires effective organization, procedures, and documentation. This typically results in providing management with more and higher-quality information, faster than most manual systems. Once management is confident that information produced by IT is reliable, management is likely to use the information for better management decisions.

ASSESSING RISKS OF INFORMATION TECHNOLOGY

Although IT can improve a company's internal control, it can also affect the company's overall control risk. Many risks in manual systems are reduced and in some cases eliminated. However, there are risks specific to IT systems that can lead to substantial losses if ignored. If IT systems fail, organizations can be paralyzed by the inability to retrieve information or by the use of unreliable information caused by processing errors. These risks increase the likelihood of material misstatements in financial statements. Specific risks to IT systems include:

1. Risks to hardware and data
2. Reduced audit trail

3. Need for IT experience and separation of IT duties

Risks to Hardware **and Data**

Although IT provides significant processing benefits, it also creates unique risks in protecting hardware and data, as well as introducing potential for new types of errors. Specific risks include the following:

- Reliance on the functioning capabilities of hardware and software. Without proper physical protection, hardware or software may not function or may function improperly Therefore, it is critical to physically protect hardware, software, and related data from physical damage that might result from inappropriate use, sabotage, or environmental damage (such as fire, heat, humidity, or water).
- Systematic versus random errors. When organizations replace manual procedures with technology-based procedures, the risk of random error from human involvement decreases. However, the risk of systematic error increases because once procedures are programmed into computer software, the computer processes information consistently for all transactions until the programmed procedures are changed. Unfortunately, flaws in software programming and changes to that software affect the reliability of computer processing, often resulting in many

significant misstatements. This risk is increased if the system is not programmed to recognize and flag unusual transactions or when transaction audit trails are inadequate.

- Unauthorized access. IT-based accounting systems often allow online access to electronic data in master files, software, and other records. Because online access can occur from remote access points, including by external parties with remote access through the Internet, there is potential for illegitimate access. Without proper online restrictions such as passwords and user IDs, unauthorized activity may be initiated through the computer, resulting in improper changes in software programs and master files.
- Loss of data. Much of the data in an IT system are stored in centralized electronic files or off-site via cloud computing. This increases the risk of loss or destruction of entire data files. This has severe ramifications, with the potential for misstated financial statements and, in certain cases, serious interruptions of the entity's operations.

Reduced Audit Trail

Misstatements may not be detected with the increased use of IT due to the loss of a visible audit trail, as well as reduced human involvement. As accounting systems continue to embrace emerging technologies, automated procedures

continue to replace traditional types of authorizations in many IT systems.

- Visibility of audit trail. Because much of the information is entered directly into the computer, the use of IT often reduces or even eliminates source documents and records that allow the organization to trace accounting information. These documents and records are called the audit trail. Because of the loss of the audit trail, other controls must be put into place to replace the traditional ability to compare output information with hard-copy data.
- Reduced human involvement. In many IT systems, employees who deal with the initial processing of transactions never see the final results. Therefore, they are less able to identify processing misstatements. Even if they see the final output, it is often difficult to recognize misstatements because underlying calculations are not visible and the results are often highly summarized. Also, employees tend to regard output generated through the use of technology as "correct" because a computer produced it.
- Lack of traditional authorization. Advanced IT systems can often initiate transactions automatically, such as calculating interest on savings accounts and ordering inventory when pre-specified order levels are reached.

Therefore, proper authorization depends on software procedures and accurate master files used to make the authorization decision.

Need for IT Experience and Separation of IT Duties

IT systems reduce the traditional separation of duties (authorization, record keeping, and custody) and create a need for additional IT experience.

- Reduced separation of duties. Computers do many duties that were traditionally segregated, such as authorization and record keeping. Combining activities from different parts of the organization into one IT function centralizes responsibilities that were traditionally divided. IT personnel with access to software and master files may be able to steal assets unless key duties are segregated within the IT function.
- Need for IT experience. Even when companies purchase simple off-the-shelf accounting software packages, it is important to have personnel with knowledge and experience to install, maintain, and use the system. As the use of IT systems increases, the need for qualified IT specialists increases. Many companies create an entire function of IT personnel, while other companies outsource the management of IT operations. The reliability of an IT

system and the information it generates often depends on the ability of the organization to employ personnel or hire consultants with appropriate technology knowledge and experience.

INTERNAL CONTROLS SPECIFIC TO INFORMATION TECHNOLOGY

To address many of the risks associated with reliance on I T, organizations often implement specific IT controls. Auditing standards describe two categories of controls for IT systems: general controls and application controls

General controls apply to all aspects of the IT function, including IT administration; separation of IT duties; systems development; physical and online security over access to hardware, software, and related data; backup and contingency planning in the event of unexpected emergencies; and hardware controls. Because general controls often apply on an entity-wide basis and affect many different software applications, auditors evaluate general controls for the company as a whole.

Application controls typically operate at the business process level and apply to processing transactions, such as controls over the processing of sales or cash receipts. Auditors must evaluate application controls for every class of

transactions or account in which the auditor plans to reduce assessed control risk because IT controls will be different across classes of transactions and accounts. Application controls are likely to be effective only when general controls are effective.

General Controls

Similar to the effect that the control environment has on other components of internal control, the six categories of general controls have an entity-wide effect on all IT functions. Auditors typically evaluate general controls early in the audit because of their impact on application controls.

1-Administration of the IT Function The board of directors' and senior management's attitude about IT affect the perceived importance of IT within an organization. Their oversight, resource allocation, and involvement in key IT decisions each signal the importance of IT. In complex environments, management may establish IT steering committees to help monitor the organization's technology needs. In less complex organizations, the board may rely on regular reporting by a chief information officer (CIO) or other senior IT manager to keep management informed. In contrast, when management assigns technology issues exclusively to lower-level employees or outside consultants,

an implied message is sent that IT is not a high priority. The result is often an understaffed, underfunded, and poorly controlled IT function.

2-Separation of IT Duties To respond to the risk of combining traditional custody, authorization, and record-keeping responsibilities by having the computer perform those tasks, well-controlled organizations respond by separating key duties within IT. For example there should be separation of IT duties to prevent IT personnel from authorizing and recording transactions to cover the theft of assets. an ideal separation of duties. Ideally, responsibilities for IT management, systems development, operations, and data control should be separated as follows:

- **IT management**. The CIO or IT manager should be responsible for oversight of the IT function to ensure that activities are carried out consistent with the IT strategic plan. A security administrator should monitor both physical and online access to hardware, software, and data files and investigate all security breaches.
- **Systems development**. Systems analysts, who are responsible for the overall design of each application system, coordinate the development, acquisition, and changes to IT systems by IT personnel responsible for programming the

application or acquiring software applications and personnel outside IT who will be the primary system users (such as accounts receivable personnel). Programmers develop flowcharts for each new application, prepare computer instructions, test the programs, and document the results.

Programmers should not have access to input data or computer operations to avoid using their knowledge of the system for personal benefit. They should be allowed to work only with test copies of programs and data so they can only make software changes after proper authorization.

- **Operations**. Computer operators are responsible for the day-to-day operations of

the computer following the schedule established by the CIO. They also monitor computer consoles for messages about computer efficiency and malfunctions.

A librarian is responsible for controlling the use of computer programs, transaction files, and other computer records and documentation. The librarian releases them to operators only when authorized. For example, programs and transaction files are released to operators only when a job is scheduled to be processed. Similarly, the librarian releases a test copy to programmers only on approval by senior management. Network administrators also affect IT operations as they are

responsible for planning, implementing, and maintaining operations of the network of servers that link users to various applications and data files.

- **Data control**. Data input/output control personnel independently verify the quality of input and the reasonableness of output. For organizations that use databases to store information shared by accounting and other functions, database administrators are responsible for the operation and access security of shared databases.

Naturally, the extent of separation of duties depends on the organization's size and complexity. In many small companies, it is not practical to segregate the duties. For example, some entities acquire accounting systems from third-party vendors or they access applications through the Internet. As a result, they may have few staff dedicated to systems development or the librarian function.

3-Systems Development

Systems development includes:

- Purchasing software or developing in-house software that meets the organization's needs. A key to implementing the right software is to involve a team of both IT and non-IT personnel, including key users of the software and internal auditors. This combination increases the likelihood that

information needs as well as software design and implementation concerns are properly addressed. Involving users also results in better acceptance by key users.

- Testing all software to ensure that the new software is compatible with existing hardware and software and determine whether the hardware and software can handle the needed volume of transactions. Whether software is purchased or developed internally, extensive testing of all software with realistic data is critical. Companies typically use one or a combination of the following two test approaches:

1. Pilot testing: A new system is implemented in one part of the organization while other locations continue to rely on the old system.
2. Parallel testing: The old and new systems operate simultaneously in all locations.

Proper documentation of the system is required for all new and modified software. After the software has been successfully tested and documented, it is transferred to the librarian in a controlled manner to ensure only authorized software are ultimately accepted as the authorized version.

4-Physical and Online Security Physical controls over computers and restrictions to on line software and related

data files decrease the risk of unauthorized changes to programs and improper use of programs and data files. Security plans should be in writing and monitored. Security controls include both physical controls and online access controls.

- Physical controls. Proper physical controls over computer equipment restrict access to hardware, software, and backup data files on magnetic tapes or disks, hard drives, CDs, and external disks. Common examples to physically restrict unauthorized use include keypad entrances, badge-entry systems, security cameras, and security personnel. More sophisticated controls only allow physical and online access after employee fingerprints are read or employee retinas are scanned and matched with an approved database. Other physical controls include monitoring of cooling and humidity to ensure that the equipment functions properly and installing fire-extinguishing equipment to reduce fire damage.
- Online access controls. Proper user IDs and passwords control access to software and related data files, reducing the likelihood that unauthorized changes are made to software applications and data files. Separate add-on security software

packages, such as firewall and encryption programs, can be installed to improve a system's security.

5-**Backup and Contingency Planning** Power failures, fire, excessive heat or humidity, water damage, or even sabotage can have serious consequences to businesses using IT To prevent data loss during power outages, many companies rely on battery backups or on-site generators. For more serious disasters, organizations need detailed backup and contingency plans such as off-site storage of critical software and data files or out sourcing to firms that specialize in secure data storage.

Backup and contingency plans should also identify alternative hardware that can be used to process company data. Companies with small IT systems can purchase replacement computers in an emergency and reprocess their accounting records by using backup copies of software and data files. Larger companies often contract with IT data centers that specialize in providing access to off-site computers and data storage and other IT services for use in the event of an IT disaster.

6-Hardware Controls

Hardware controls are built into computer equipment by manufacturers to detect and report equipment failures.

Auditors are more concerned with how the client handles errors identified by the hardware controls than with their adequacy. Regardless of the quality of hardware controls, output will be corrected only if the client has provided for handling machine errors.

Application Controls

Application controls are designed for each software application and are intended to help a company satisfy the six transaction-related audit objectives. Although some application controls affect one or only a few transaction-related audit objectives, most controls prevent or detect several types of misstatements. Other application controls concern account balance and presentation and disclosure objectives.

Application controls may be done by computers or client personnel. When they are done by client personnel, they are called manual controls. The effectiveness of manual controls depends on both the competence of the people performing the controls and the care they exercise when doing them. For example, when credit department personnel review exception reports that identify credit sales exceeding a customer's authorized credit limit, the auditor may need to evaluate the person's ability to make the assess ment and test the accuracy

of the exception report. When controls are done by computers, they are called automated controls. Because of the nature of computer processing, automated controls, if properly designed, lead to consistent operation of the controls.

Application controls fall into three categories: input, processing, and output. Although the objectives for each category are the same, the procedures for meeting the objectives vary considerably. Let's examine each more closely.

1-Input Controls

Input controls are designed to ensure that the information entered into the computer is authorized, accurate, and complete. They are critical because a large portion of errors in IT systems result from data entry errors and, of course, regardless of the quality of information processing, input errors result in output errors. Typical controls developed for manual systems are still important in IT systems, such as:

- Management's authorization of transactions
- Adequate preparation of input source documents
- Competent personnel

Controls specific to IT include:

- Adequately designed input screens with preformatted prompts for transaction information
- Pull-down menu lists of available software options
- Computer-performed validation tests of input accuracy, such as the validation of customer numbers against customer master files
- Online-based input controls for e-commerce applications where external parties, such as customers and suppliers, perform the initial part of the transaction inputting
- Immediate error correction procedures, to provide for early detection and correction of input errors.
- Accumulation of errors in an error file for subsequent follow-up by data input personnel

For IT systems that group similar transactions together into batches, the use of financial batch totals, hash totals, and record count totals helps increase the accuracy and completeness of input. For example, the comparison of a record count calculated before data entry of the number of vendor invoices to be entered to the number of vendor invoices processed by the system would help determine if any invoices were omitted or entered more than once during data entry.

2-**Processing Controls**

Processing controls prevent and detect errors while transaction data are processed. General controls, especially controls related to systems development and security, provide essential control for minimizing errors. Specific application processing controls are often programmed into software to prevent, detect, and correct processing errors.

3-**Output Controls**

Output controls focus on detecting errors after processing is completed, rather than on preventing errors. The most important output control is review of the data for reasonableness by someone knowledgeable about the output. Users can often identify errors because they know the approximate correct amounts. Several common controls for detecting errors in outputs include:

- Reconcile computer-produced output to manual control totals
- Compare the number of units processed to the number of units submitted for processing
- Compare a sample of transaction output to input source documents
- Verify dates and times of processing to identify any out-of-sequence processing.

For sensitive computer output, such as payroll checks, control can be improved by requiring employees to present employee identification before they receive their checks or by requiring the use of direct deposit into the employees' pre-approved bank accounts. Also, access to sensitive output stored in electronic files or transmitted across networks, including the Internet, is often restricted by requiring passwords, user IDs, and encryption techniques.

IMPACT OF INFORMATION TECHNOLOGY ON THE AUDIT PROCESS

Because auditors are responsible for obtaining an understanding of internal control, they must be knowledgeable about general and application controls, whether the client's use of IT is simple or complex. Knowledge of general controls increases the auditor's ability to assess and rely on effective application controls to reduce control risk for related audit objectives. For public company auditors who must issue an opinion on internal control over financial reporting, knowledge of both general and application IT controls is essential.

Effect of General Controls on Control Risk

Auditors should evaluate the effectiveness of general controls before evaluating application controls. general controls have

a pervasive effect on the effectiveness of application controls, so auditors should first evaluate those controls before concluding whether application controls are effective.

Effects of General Controls on System-wide Applications

Ineffective general controls create the potential for material misstatements across all system applications, regardless of the quality of individual application controls. For example, if IT duties are inadequately separated such that computer operators also work as programmers and have access to computer programs and files, the auditor should be concerned about the potential for unauthorized software program or data file changes that might lead to fictitious transactions or unauthorized data and omissions in accounts such as sales, purchases, and salaries. Similarly, if the auditor observes that data files are inadequately safeguarded, the auditor may conclude that there is a significant risk of loss of data for every class of transaction that relies on that data to conduct application controls. In this situation, the auditor may need to expand audit testing in several areas such as cash receipts, cash disbursements, and sales to satisfy the completeness objective.

On the other hand, if general controls are effective, the auditor may be able to place greater reliance on application

controls whose functionality is dependent on IT. Auditors can then test those application controls for operating effectiveness and rely on the results to reduce substantive testing.

Effect of General Controls on Software Changes Client changes to application software affect the auditor's reliance on automated controls. When the client changes the software, the auditor must evaluate whether additional testing is needed. If general controls are effective, the auditor can easily identify when software changes are made. But in companies where general controls are deficient, it may be difficult to identify software changes. As a result, auditors must consider doing tests of application controls that depend on IT throughout the current year audit.

Obtaining an Understanding of Client General Controls Auditors typically obtain information about general and application controls through the following ways:

- Interviews with IT personnel and key users
- Examination of system documentation such as flowcharts, user manuals, program change requests, and system testing results
- Reviews of detailed questionnaires completed by IT staff

In most cases, auditors should use several of these approaches because each offers different information. For example, interviews with the chief information officer and systems analysts provide useful information about the operation of the entire IT function, the extent of software development and hardware changes made to account ing application software, and an overview of any planned changes. Reviews of program change requests and system test results are useful to identify program changes in application software. Questionnaires help auditors identify specific internal controls.

Effect of IT Controls on Control Risk and Substantive Tests

The following discussion of control risk may seem familiar because auditors link IT controls to audit objectives following the same principles and approaches. You may recall that auditors relate controls and deficiencies in internal control to specific audit objectives. Based on those controls and deficiencies, the auditor assesses control risk for each related audit objective. The same approach is used when controls are done by IT.

Relating IT Controls to Transaction-Related Audit Objectives Auditors do not normally link controls and

deficiencies in general controls to specific transaction-related audit objectives. Because general controls affect audit objectives in several cycles, if the general controls are ineffective, the auditor's ability to rely on IT-related application controls to reduce control risk in all cycles is reduced. Conversely, if general controls are effective, it increases the auditor's ability to rely on IT-based application controls for all cycles.

Auditors can use a control risk matrix to help them identify both manual and automated application controls and control deficiencies for each related audit objective. For example, to prevent payments to fictitious employees, a computer comparison of inputted employee identification numbers with the employee master file might reduce control risk for the occurrence objective for payroll transactions. Auditors can identify manual and automated controls at the same time or separately, but they should not identify deficiencies or assess control risk until both types of controls have been identified.

Effect of IT Controls on Substantive Testing After identifying specific IT-based application controls that can be used to reduce control risk, auditors can reduce substantive testing. The systematic nature of automated application

controls may allow auditors to reduce sample sizes used to test those controls in both an audit of financial statements and an audit of internal control over financial reporting. Auditors may also be able to rely on prior year testing of automated controls as when general controls are effective and the automated control has not been changed since testing by the auditor. Auditors often use their own software to test the controls. These factors, when combined, often lead to extremely effective and efficient audits.

The impact of general controls and application controls on audits is likely to vary depending on the level of complexity in the IT environment. We discuss that next.

Auditing in Less Complex IT Environments

Many organizations design and use accounting software to process business transactions so that source documents are retrievable in a readable form and can be traced easily through the accounting system to output. Such systems retain many of the traditional source documents such as customer purchase orders, shipping and receiving records, and sales and vendor invoices. The software also produces printed journals and ledgers that allow the auditor to trace transactions through the accounting records. Internal controls

in these systems often include client personnel comparing computer-produced records with source documents.

In these situations, the use of IT does not significantly impact the audit trail. Typically, auditors obtain an understanding of internal control and do tests of controls, substantive tests of transactions, and account balance verification procedures in the same way they do when testing manual accounting systems. The auditor is still responsible for obtaining an understanding of general and application computer controls because such knowledge is useful in identifying risks that may affect the financial statements. But, the auditor typically does not test automated controls. This approach to auditing is often called auditing around the computer because the auditor is not using automated controls to reduce assessed control risk. Instead, the auditor uses manual controls to support a reduced control risk assessment.

Auditors in smaller companies often audit around the computer when general controls are less effective than in more complex IT environments. Often, smaller companies lack dedicated IT personnel, or they rely on periodic involvement of IT consultants to assist in installing and maintaining hardware and software. The responsibility of the IT function is often assigned to user departments, such as the

accounting department, where the hardware physically resides. Auditing around the computer is effective because these systems often produce sufficient audit trails to permit auditors to compare source documents such as vendors' and sales invoices to output, and there may be manual controls over the input and output processes that operate effectively to prevent and detect material financial statement misstatements.

Many organizations with non-complex IT environments often heavily rely on desktop and networked servers to do accounting system functions. The use of computers creates the following unique audit considerations:

- Limited reliance on automated controls. Even in less sophisticated IT environments, automated controls can often be relied on. For example, software programs can be loaded on the computer's hard drive in a format that does not permit changes by client personnel, making the risk of unauthorized changes in the software low. Before relying on controls built into that software, auditors must be confident that the software vendor has a reputation for quality.
- Access to master files. When clients use desktop computers and servers, auditors should be concerned about access to master files by unauthorized people. Appropriate

separation of duties between personnel with access to master files and responsibilities for processing is critical. Regular owner-manager review of transaction output improves internal control.

- Risk of computer viruses. Computer viruses can lead to the loss of data and programs. Certain viruses can damage electronic files or shut down an entire network of computers. Regularly updated virus protection software that screens for virus infections improves controls.

A public company's use of desktop computers in the financial reporting process may affect the audit of internal control over financial reporting. If the auditor concludes that general controls are ineffective, the auditor's tests of automated application controls may need to be increased. The auditor must also consider the implications of the lack of effective general controls on the opinion about the operating effectiveness of internal control over financial reporting.

Auditing in More Complex IT Environments

As organizations expand their use of IT, internal controls are often embedded in applications that are available only electronically. When traditional source documents such as invoices, purchase orders, billing records, and accounting records such as sales journals, inventory listings, and

accounts receivable subsidiary records exist only electronically, auditors must change their approach to auditing. This approach is often called auditing through the computer.

Auditors use three categories of testing approaches when auditing through the computer: test data approach, parallel simulation, and embedded audit module approach.

Test Data Approach In the test data approach, auditors process their own test data using the client's computer system and application program to determine whether the automated controls correctly process the test data. Auditors design the test data to include transactions that the client's system should either accept or reject. After the test data are processed on the client's system, auditors compare the actual output to the expected output to assess the effectiveness of the application program's automated controls. When using the test data approach, auditors have three main considerations:

1. Test data should include all relevant conditions that the auditor wants tested. Auditors should design test data to test all key computer-based controls and include realistic data that are likely to be a part of the client's normal processing, including both valid and invalid transactions.

2. Application programs tested by auditors' test data must be the same as those the client used throughout the year. One approach is to run the test data on a surprise basis, possibly at random times throughout the year, even though doing so is costly and time consuming. Another method is to rely on the client's general controls in the librarian and systems development functions to ensure that the program tested is the one used in normal processing.

3. Test data must be eliminated from the client's records. If auditors process test data while the client is processing its own transactions, auditors must eliminate the test data in the client's master files after the tests are completed to prevent master files and transaction files from being permanently contaminated by the auditor's testing. Auditors can do this by developing and processing data that reverses the effect of the test data.

Because of the complexities of many clients' application software programs, auditors who use the test data approach often obtain assistance from a computer audit specialist. Many larger CPA firms have staff dedicated to assisting in testing client application controls.

Parallel Simulation Auditors often use auditor-controlled software to do the same operations that the client's software

does, using the same data files. The purpose is to determine the effectiveness of automated controls and to obtain evidence about electronic account balances. This testing approach is called parallel simulation testing.. Whether testing controls or ending balances, the auditor compares the output from the auditor's software to output from the client's system to test the effectiveness of the client's software and to determine if the client's balance is correct. A variety of software is available to assist auditors.

Auditors commonly do parallel simulation testing using generalized audit software (GAS), which are programs designed specifically for auditing purposes. Commercially available audit software, such as ACL or IDEA, can be easily operated on auditors' desktop or laptop computers. Auditors obtain copies of machine-readable client databases or master files and use the generalized audit software to do a variety of tests of the client's electronic data. Instead of GAS, some auditors use spreadsheet software to do simple parallel simulation tests. Others develop their own customized audit software.

Generalized audit software provides three advantages: it is relatively easy to train audit staff in its use, even if they have had little audit-related IT training, the software can be

applied to a wide variety of clients with minimal customization, and it has the ability to do audit tests much faster and in more detail than using traditional manual procedures. Two common uses of generalized audit software are examined in detail:

1. Generalized audit software is used to test automated controls. An auditor obtains copies of a client's customer credit limit master file and a customer order file, and then instructs the auditor's computer to list transactions that exceed the customer's authorized credit limit. The auditor then compares the audit output to the client's list of customer orders that were rejected for exceeding authorized credit limits.
2. Generalized audit software is used to verify the client's account balances. An auditor can use the software to sum the master file of customer accounts receivable to determine whether the total agrees with the general ledger balance.

Embedded Audit Module Approach When using the embedded audit module approach, auditors insert an audit module in the client's application system to identify specific types of transactions. For example, auditors might use an embedded module to identify all purchases exceeding $25,000 for follow-up with more detailed examination for the

occurrence and accuracy transaction-related audit objectives. In some cases, auditors later copy the identified transactions to a separate data file and then process those transactions using parallel simulation to duplicate the function done by the client's system. The auditor then compares the client's output with the auditor's output. Discrepancies are printed on an exception report for auditor follow-up.

The embedded audit module approach allows auditors to continuously audit transactions by identifying actual transactions processed by the client as compared to test data and parallel simulation approaches, which only allow intermittent testing. Internal audit may also find this technique useful.

Although auditors may use one or any combination of testing approaches, they typically use:

- Test data to do tests of controls and substantive tests of transactions
- Parallel simulation for substantive testing, such as recalculating transaction amounts and footing master file subsidiary records of account balances
- Embedded audit modules to identify unusual transactions for substantive testing

ISSUES FOR DIFFERENT IT ENVIRONMENTS

Issues for e-Commerce Systems

Companies using e-commerce systems to transact business electronically link their internal accounting systems to external parties' systems, such as customers and suppliers. As a result, a company's risks depend in part on how well its e-commerce partners identify and manage risks in their own IT systems. To manage these interdependency risks, companies must ensure that their business partners manage IT system risks before conducting business with them electronically. The use of e-commerce systems also exposes sensitive company data, programs, and hardware to potential interception or sabotage by external parties. To limit these exposures, companies use firewalls, encryption techniques, and digital signatures.

A firewall protects data, programs, and other IT resources from unauthorized external users accessing the system through networks, such as the Internet. A firewall is a system of hardware and software that monitors and controls the flow of e-commerce communications by channeling all network connections through controls that verify external users, grant accesses to authorized users, deny access to unauthorized

users, and direct authorized users to requested programs or data.

Encryption techniques protect the security of electronic communication when information is transmitted and when it is stored. Computerized encryption changes a standard message or data file into one that is coded (encrypted), requiring the receiver of the electronic message or user of the encrypted data file to use a decryption program to decode the message or data. A public key encryption technique is often used, where one key (the public key) is used for encoding the message and another key (the private key) is used to decode the message. The public key is distributed to all approved users of the e-commerce system. The private key is distributed only to internal users with the authority to decode the message.

To authenticate the validity of a trading partner conducting business electronically, companies may rely on external certification authorities who verify the source of the public key by using digital signatures. A trusted certification authority issues a digital certificate to individuals and companies engaging in e-commerce. The digital signature contains the holder's name and its public key. It also contains the name of the certification authority and the certificate's

expiration date and other specified information. To guarantee integrity and authenticity, each signature is digitally signed by the private key maintained by the certification authority.

Auditors should understand the nature of firewall and encryption controls to ensure that they are properly implemented and monitored. An inadequate firewall may increase the likelihood of unauthorized changes to software and data. Thus, the auditor may need to test controls surrounding the use of the firewall to ensure that automated application controls used to support assessed control risk below the maximum have not been changed without the auditor's knowledge. Similarly, auditors may need to understand and test encryption controls to satisfy transaction and account balance objectives. Failure to adequately encrypt transaction or account data may result in changes in amounts supporting transactions or account balances.

Issues When Clients Outsource IT

Many clients outsource some or all of their IT needs to an independent computer service center, including application service providers (ASPs) and cloud computing environments, rather than maintain an internal IT center. Smaller companies often outsource their payroll function because payroll is reasonably standard from company to company, and many

reliable providers of payroll services are available. Companies also outsource their e-commerce systems to external Web site service providers, including those that offer cloud computing services as described in the vignette above. Like all outsourcing decisions, companies decide whether to outsource IT on a cost-benefit basis.

When outsourcing to a computer service center, the client submits input data, which the service center processes for a fee, and returns the agreed-upon output and the original input. For payroll, the company submits data from time cards, pay rates, and W-4s to the service center. The service center returns payroll checks, journals, and input data each week and W-2s at the end of each year. The service center is responsible for designing the computer system and providing adequate controls to ensure that the processing is reliable.

Understanding Internal Controls in Outsourced Systems The auditor faces a difficulty when obtaining an understanding of the client's internal controls in these situations because many of the controls reside at the service center, and the auditor cannot assume that the controls are adequate simply because it is an independent enterprise. Auditing standards require the auditor to consider the need to obtain an understanding and test the service center's controls if the service center

application involves processing significant financial data. For example, many of the controls for payroll transaction-related audit objectives reside within the software program maintained and supported by the payroll services company, not the audit client.

When obtaining an understanding and testing the service center's controls, the auditor should use the same criteria that was used in evaluating a client's internal controls. The depth of the auditor's understanding depends on the complexity of the system and the extent to which the control is relied upon to reduce control risk. The depth of understanding also depends on the extent to which key controls over transaction-related audit objectives reside at the service center for audits of internal control for public companies. If the auditor concludes that active involvement at the service center is the only way to conduct the audit, it may be necessary to obtain an understanding of internal controls at the service center and test controls using test data and other tests of controls.

Reliance on Service Center Auditors In recent years, it has become increasingly common for the service center to engage a CPA firm to obtain an understanding and test internal controls of the service center and issue a report for use by all customers and their independent auditors. The

purpose of this independent assessment is to provide service center customers reasonable assurance about the adequacy of the service center's general and application controls and to eliminate the need for redundant audits by customers' auditors. If the service center has many customers and each requires an understanding of the service center's internal control by its own independent auditor, the inconvenience and cost to the service center can be substantial.

Attestation standards provide guidance to auditors who issue reports on the internal control of service organizations (service auditors), while auditing standards provide guidance to auditors of user organizations (user auditors) that rely on the service auditor's report. Service auditors may issue two types of reports:

- Report on management's description of a service organization's system and the suitability of the design of controls (referred to as a Type 1 report)
- Report on management's description of a service organization's system and the suitability of the design and operating effectiveness of controls (referred to as a Type 2 report)

A Type 1 report helps auditors obtain an under standing of internal control to plan the audit. However, auditors also

require evi dence about the operating effectiveness of controls to assess control risk, especially when auditing internal control over financial reporting for public companies. This evidence can:

- Be based on the service auditor's Type 2 report that includes tests of the operating effectiveness of controls
- Come from tests of the user organization's controls over the activities of the service organization
- Be created when the user auditor does appropriate tests at the service organization

If the user auditor decides to rely on the service auditor's report, appropriate inquiries should be made about the service auditor's reputation. Auditing standards state that the user auditor should not make reference to the report of the service auditor in the opinion on the user organization's financial statements.

MULTIPLE CHOICE QUESTIONS FROM CPA EXAMINATIONS

1- Which of the following is an advantage of a computer-based system for transaction processing over a manual system? A computer-based system

(a) does not require as stringent a set of internal controls.

(b) will produce a more accurate set of financial statements.

(c) will be more efficient in generating financial statements.

(d) eliminates the need to reconcile control accounts and subsidiary ledgers.

2-. Which of the following is an example of an application control?

(a) The client uses access security software to limit access to each of the accounting applications.

(b) Employees are assigned a user ID and password that must be changed every quarter.

(c) The sales system automatically computes the total sale amount and posts the total to the sales journal master file.

(d) Systems programmers are restricted from doing applications programming functions.

3- Which of the following is generally not considered a category of IT general controls?

(a) Controls that determine whether a vendor number matches the pre-approved vendors in the vendor master file.

(b) Controls that restrict system-wide access to programs and data.

(c) Controls that oversee the acquisition of application software.

(d) Controls that oversee the day-to-day operation of IT applications

4- As general IT controls weaken, the auditor is most likely to

(a) reduce testing of automated application controls done by the computer.

(b) increase testing of general IT controls to conclude whether they are operating effectively.

(c) expand testing of automated application controls used to reduce control risk to cover greater portions of the fiscal year under audit.

(d) ignore obtaining knowledge about the design of general IT controls and whether they have been implemented.

5- . Which of the following client IT systems generally can be audited without examining or directly testing the computer programs of the system?

(a) A system that performs relatively uncomplicated processes and produces detailed output.

(b) A system that affects a number of essential master files and produces limited output.

(c) A system that updates a few essential master files and produces no printed output other than final balances.

(d) A system that does relatively complicated processing and produces little detailed output.

6- Which of the following procedures most likely could prevent IT personnel from modifying programs to bypass automated controls?

(a) Periodic management review of computer utilization reports and systems docu-mentation.

(b) Segregation of duties within IT for computer programming and computer operations.

(c) Participation of user department personnel in designing and approving new systems.

(d) Physical security of IT facilities in limiting access to IT equipment.

7-. Before processing, the system validates the sequence of items to identify any breaks in sequence of input documents. This automated control is primarily designed to ensure the

(a) accuracy of input. (c) completeness of input.

(b) authorization of data entry. (d) restriction of duplicate entries.

8- An auditor will use the test data approach to obtain certain assurances with respect to the

(a) input data.

(b) machine capacity.

(c) procedures contained within the program.

(d) degree of data entry accuracy.