AU-C Section 520

Analytical Procedures

Source: SAS No. 122.

Effective for audits of financial statements for periods ending on or after December 15, 2012.

Introduction

Scope of This Section

.01 This section addresses the auditor's use of analytical procedures as substantive procedures (substantive analytical procedures). It also addresses the auditor's responsibility to perform analytical procedures near the end of the audit that assist the auditor when forming an overall conclusion on the financial statements. Section 315, *Understanding the Entity and Its Environment and Assessing the Risks of Material Misstatement*, addresses the use of analytical procedures as risk assessment procedures (which may be referred to as analytical procedures used to plan the audit).[1] Section 330, *Performing Audit Procedures in Response to Assessed Risks and Evaluating the Audit Evidence Obtained*, addresses the nature, timing, and extent of audit procedures in response to assessed risks; these audit procedures may include substantive analytical procedures.[2]

Effective Date

.02 This section is effective for audits of financial statements for periods ending on or after December 15, 2012.

Objectives

.03 The objectives of the auditor are to

a. obtain relevant and reliable audit evidence when using substantive analytical procedures and

b. design and perform analytical procedures near the end of the audit that assist the auditor when forming an overall conclusion about whether the financial statements are consistent with the auditor's understanding of the entity. (Ref: par. .A1)

Definition

.04 For the purposes of generally accepted auditing standards, the following term has the meaning attributed as follows:

Analytical procedures. Evaluations of financial information through analysis of plausible relationships among both financial and nonfinancial data. Analytical procedures also encompass

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[1] Paragraph .06*b* of section 315, *Understanding the Entity and Its Environment and Assessing the Risks of Material Misstatement*.

[2] Paragraphs .06 and .18 of section 330, *Performing Audit Procedures in Response to Assessed Risks and Evaluating the Audit Evidence Obtained*.

such investigation, as is necessary, of identified fluctuations or relationships that are inconsistent with other relevant information or that differ from expected values by a significant amount. (Ref: par. .A2–.A6)

Requirements

Substantive Analytical Procedures

.05 When designing and performing analytical procedures, either alone or in combination with tests of details, as substantive procedures in accordance with section 330, the auditor should[3] (Ref: par. .A7–.A9)

a. 1. determine the suitability of particular substantive analytical procedures for given assertions, taking into account the assessed risks of material misstatement and tests of details, if any, for these assertions; (Ref: par. .A10–.A16)

b. 2. evaluate the reliability of data from which the auditor's expectation of recorded amounts or ratios is developed, taking into account the source, comparability, and nature and relevance of information available and controls over preparation; (Ref: par. .A17–.A20)

c. 3. develop an expectation of recorded amounts or ratios and evaluate whether the expectation is sufficiently precise (taking into account whether substantive analytical procedures are to be performed alone or in combination with tests of details) to identify a misstatement that, individually or when aggregated with other misstatements, may cause the financial statements to be materially misstated; and (Ref: par. .A21–.A23)

d. 4. determine the amount of any difference of recorded amounts from expected values that is acceptable without further investigation as required by paragraph .07 and 5 compare the recorded amounts, or ratios developed from recorded amounts, with the expectations. (Ref: par. .A24)

Analytical Procedures That Assist When Forming an Overall Conclusion

.06 The auditor should design and perform analytical procedures near the end of the audit that assist the auditor when forming an overall conclusion about whether the financial statements are consistent with the auditor's understanding of the entity. (Ref: par. .A25–.A27)

6 Investigating Results of Analytical Procedures

.07 If analytical procedures performed in accordance with this section identify fluctuations or relationships that are inconsistent with other relevant information or that differ from expected values by a significant amount, the auditor should investigate such differences by

a. inquiring of management and obtaining appropriate audit evidence relevant to management's responses and

Inquiry alone is not sufficient evidence

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[3] Paragraph .18 of section 330.

b. performing other audit procedures as necessary in the circumstances. (Ref: par. .A28–.A29)

Documentation (Ref: par. .A30)

.08 When substantive analytical procedures have been performed, the auditor should include in the audit documentation the following:[4]

a. The expectation referred to in paragraph .05*c* and the factors considered in its development when that expectation or those factors are not otherwise readily determinable from the audit documentation

b. Results of the comparison referred to in paragraph .05*d* of the recorded amounts, or ratios developed from recorded amounts, with the expectations

c. Any additional auditing procedures performed in accordance with paragraph .07 relating to the investigation of fluctuations or relationships that are inconsistent with other relevant information or that differ from expected values by a significant amount and the results of such additional procedures

Application and Other Explanatory Material

Objectives (Ref: par. .03b)

.A1 Analytical procedures performed near the end of the audit are intended to corroborate audit evidence obtained during the audit of the financial statements to assist the auditor in drawing reasonable conclusions on which to base the auditor's opinion.

Definition (Ref: par. .04)

.A2 Analytical procedures include the consideration of comparisons of the entity's financial information with, for example

- comparable information for prior periods.
- anticipated results of the entity, such as budgets or forecasts, or expectations of the auditor, such as an estimation of depreciation.
- similar industry information, such as a comparison of the entity's ratio of sales to accounts receivable and gross margin percentages with industry averages or other entities of comparable size in the same industry.

.A3 Analytical procedures also include consideration of relationships, for example

- among elements of financial information, such as gross margin percentages, that would be expected to conform to a predictable pattern based on recent history of the entity and industry.
- between financial information and relevant nonfinancial information, such as payroll costs to number of employees.

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[4] Paragraphs .08–.12 and .A8 of section 230, *Audit Documentation*.

.A4 Various methods may be used to perform analytical procedures. These methods range from performing simple comparisons to performing complex analyses using advanced statistical techniques. Analytical procedures may be applied to consolidated financial statements, components, and individual elements of information.

.A5 *Scanning* is a type of analytical procedure involving the auditor's exercise of professional judgment to review accounting data to identify significant or unusual items to test. This type of analytical procedure is described further in section 500, *Audit Evidence*.[5]

.A6 A basic premise underlying the application of analytical procedures is that plausible relationships among data may reasonably be expected to exist and continue in the absence of known conditions to the contrary. The reasons that make relationships plausible are an important consideration because data sometimes appears to be related when it is not, which may lead the auditor to erroneous conclusions. In addition, the presence of an unexpected relationship may provide important evidence when appropriately scrutinized.

Substantive Analytical Procedures (Ref: par. .05)

.A7 The auditor's substantive procedures to address the assessed risk of material misstatement for relevant assertions may be tests of details, substantive analytical procedures, or a combination of both. The decision about which audit procedures to perform, including whether to use substantive analytical procedures, is based on the auditor's professional judgment about the expected effectiveness and efficiency of the available audit procedures to reduce the assessed risk of material misstatement to an acceptably low level.

.A8 The expected effectiveness and efficiency of a substantive analytical procedure in addressing risks of material misstatement depends on, among other things, (*a*) the nature of the assertion, (*b*) the plausibility and predictability of the relationship, (*c*) the availability and reliability of the data used to develop the expectation, and (*d*) the precision of the expectation.

.A9 The auditor may inquire of management about the availability and reliability of information needed to apply substantive analytical procedures and the results of any such analytical procedures performed by the entity. It may be effective to use analytical data prepared by management, provided that the auditor is satisfied that such data is properly prepared.

Suitability of Particular Substantive Analytical Procedures for Given Assertions (Ref: par. .05a)

.A10 When more persuasive audit evidence is desired from substantive analytical procedures, more predictable relationships are necessary to develop the expectation. Relationships in a stable environment are usually more predictable than relationships in a dynamic or unstable environment. Relationships involving income statement accounts tend to be more predictable than relationships involving only balance sheet accounts because income statement accounts represent transactions over a period of time, whereas balance sheet accounts represent amounts as of a point in time. Relationships involving transactions subject to management discretion may be less predictable. For example, management may elect to incur maintenance expense rather than replace plant and equipment, or they may delay advertising expenditures.

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[5] Paragraph .A22 of section 500, *Audit Evidence*.

.A11 Substantive analytical procedures are generally more effective for large volumes of transactions that tend to be predictable over time. The application of planned analytical procedures is based on the expectation that relationships among data exist and continue in the absence of known conditions to the contrary. Particular conditions that can cause variations in these relationships include, for example, specific unusual transactions or events, accounting changes, business changes, random fluctuations, or misstatements. The suitability of a particular analytical procedure will depend upon the auditor's assessment of how effective it will be in detecting a misstatement that, individually or when aggregated with other misstatements, may cause the financial statements to be materially misstated.

.A12 In some cases, even an unsophisticated predictive model may be effective as an analytical procedure. For example, when an entity has a known number of employees at fixed rates of pay throughout the period, it may be possible for the auditor to use this data to estimate the total payroll costs for the period with a high degree of accuracy, thereby providing audit evidence for a significant item in the financial statements and reducing the need to perform tests of details on the payroll. The use of widely recognized trade ratios (such as profit margins for different types of retail entities) can often be used effectively in substantive analytical procedures to provide evidence to support the reasonableness of recorded amounts.

.A13 Different types of analytical procedures provide different levels of assurance. Analytical procedures involving, for example, the prediction of total rental income on a building divided into apartments, taking the rental rates, the number of apartments, and vacancy rates into consideration, can provide persuasive evidence and may eliminate the need for further verification by means of tests of details, provided that the elements are appropriately verified. In contrast, calculation and comparison of gross margin percentages as a means of confirming a revenue figure may provide less persuasive evidence but may provide useful corroboration if used in combination with other audit procedures.

.A14 The determination of the suitability of particular substantive analytical procedures is influenced by the nature of the assertion and the auditor's assessment of the risk of material misstatement. For example, if controls over payroll processing are deficient, the auditor may need to perform more extensive tests of details for assertions related to compensation.

.A15 Particular substantive analytical procedures may also be considered suitable when tests of details are performed on the same assertion. For example, when obtaining audit evidence regarding the valuation assertion for accounts receivable balances, the auditor may apply analytical procedures to an aging of customers' accounts, in addition to performing tests of details on subsequent cash receipts, to determine the collectability of the receivables.

Considerations Specific to Governmental Entities

.A16 The relationships between individual financial statement items traditionally considered in the audit of for-profit businesses may not always be relevant in the audit of governmental entities. For example, relationships describing profitability or return on investment may have limited or no applicability. In addition, the nature of balances reported by a governmental entity may result in different expected relationships than those traditionally assumed for businesses. For example, relationships between revenue, receivables, and inventory may be different when revenue and receivables arise from nonexchange transactions and inventory does not represent products held for sale. Also, governmental entities' budgets are a source of data that may be used as a benchmark for evaluating individual financial statements.

The Reliability of the Data (Ref: par. .05b)

.A17 The reliability of data is influenced by its source and nature and is dependent on the circumstances under which it is obtained. Accordingly, the following are relevant when determining whether data is reliable for purposes of designing substantive analytical procedures:

a. The source of the information available. For example, information may be more reliable when it is obtained from independent sources outside the entity.[6]

b. The comparability of the information available. For example, broad industry data may need to be supplemented to be comparable to that of an entity that produces and sells specialized products.

c. The nature and relevance of the information available. For example, whether budgets have been established as results to be expected rather than as goals to be achieved.

d. Controls over the preparation of the information that are designed to ensure its completeness, accuracy, and validity. For example, controls over the preparation, review, and maintenance of budgets.

.A18 Data may be readily available to develop expectations for some assertions. For example, the auditor may consider whether financial information, such as budgets or forecasts, and nonfinancial information, such as the number of units produced or sold, is available to design substantive analytical procedures.

.A19 The auditor may consider testing the operating effectiveness of controls, if any, over the entity's preparation of information used by the auditor in performing substantive analytical procedures in response to assessed risks. When such controls are effective, the auditor may have greater confidence in the reliability of the information and, therefore, in the results of analytical procedures. The operating effectiveness of controls over nonfinancial information may often be tested in conjunction with other tests of controls. For example, in establishing controls over the processing of sales invoices, an entity may include controls over the recording of unit sales. In these circumstances, the auditor may test the operating effectiveness of controls over the recording of unit sales in conjunction with tests of the operating effectiveness of controls over the processing of sales invoices. Alternatively, the auditor may consider whether the information was subjected to audit testing. Section 330 addresses determining the audit procedures to be performed on the information to be used for substantive analytical procedures.[7]

.A20 The matters discussed in paragraph .A17*a–d* are relevant irrespective of whether the auditor performs substantive analytical procedures on the entity's period-end financial statements or at an interim date and plans to perform substantive analytical procedures for the remaining period. Section 330 addresses performing substantive procedures at an interim date.[8]

Evaluation of Whether the Expectation Is Sufficiently Precise (Ref: par. .05c)

.A21 In evaluating whether the expectation is sufficiently precise when performing a substantive analytical procedure, it is appropriate for the auditor

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[6] Paragraph .A32 of section 500.

[7] Paragraph .25 of section 330.

[8] Paragraphs .23–.24 of section 330.

to take into account whether substantive analytical procedures are the only substantive procedures planned to address a particular risk of misstatement at the relevant assertion level or whether the risk will be addressed through a combination of substantive analytical procedures and tests of details. A less precise expectation may be appropriate when evidence obtained from performing the substantive analytical procedure will be combined with audit evidence from performing tests of details. A more precise expectation, however, is necessary when the substantive analytical procedure is the only procedure planned to address a particular risk of misstatement for a relevant assertion.

.A22 As expectations become more precise, the range of expected differences becomes narrower, and accordingly, the likelihood increases that significant differences from the expectations are due to misstatements. Matters relevant to the auditor's evaluation of whether the expectation can be developed with sufficient precision to identify a misstatement that, when aggregated with other misstatements, may cause the financial statements to be materially misstated, include the following:

- The accuracy with which the expected results of substantive analytical procedures can be predicted. For example, the auditor may expect greater consistency in comparing gross profit margins from one period to another than in comparing discretionary expenses, such as research or advertising.
- The degree to which information can be disaggregated. For example, substantive analytical procedures may be more effective when applied to financial information on individual sections of an operation or to financial statements of components of a diversified entity than when applied to the financial statements of the entity as a whole.

.A23 When expectations are developed at a more detailed level, it is more likely that the analytical procedure will more effectively address the assessed risk of misstatement to which it is directed. Monthly amounts may be more effective than annual amounts, and comparisons by location or line of business usually are more effective than companywide comparisons. The appropriate level of detail may be influenced by the nature of the entity, its size, and its complexity. The risk that material misstatements may be obscured by offsetting factors increases as an entity's operations become more complex and diversified. Disaggregation of the information helps reduce this risk.

Amount of Acceptable Difference of Recorded Amounts From Expected Values (Ref: par. .05d)

.A24 The auditor's determination of the amount of difference from the expectation that can be accepted without further investigation is influenced by materiality[9] and the desired level of assurance, while taking into account the possibility that a misstatement, individually or when aggregated with other misstatements, may cause the financial statements to be materially misstated. Section 330 requires the auditor to obtain more persuasive audit evidence the higher the auditor's assessment of risk.[10] Accordingly, as the assessed risk increases, the amount of difference considered acceptable without further investigation decreases in order to achieve the desired level of persuasive evidence.[11]

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[9] Paragraph .A16 of section 320, *Materiality in Planning and Performing an Audit*.

[10] Paragraph .07*b* of section 330.

[11] Paragraph .A20 of section 330.

Analytical Procedures That Assist When Forming an Overall Conclusion (Ref: par. .06)

.A25 A wide variety of analytical procedures may be used when forming an overall conclusion. These procedures may include reading the financial statements and considering (*a*) the adequacy of the evidence gathered in response to unusual or unexpected balances identified during the course of the audit and (*b*) unusual or unexpected balances or relationships that were not previously identified. Results of these analytical procedures may indicate that additional evidence is needed.

.A26 The results of analytical procedures designed and performed in accordance with paragraph .06 may identify a previously unrecognized risk of material misstatement. In such circumstances, section 315 requires the auditor to revise the auditor's assessment of the risks of material misstatement and modify the further planned audit procedures accordingly.[12]

.A27 The analytical procedures performed in accordance with paragraph .06 may be similar to those that would be used as risk assessment procedures.

Investigating Results of Analytical Procedures (Ref: par. .07)

.A28 Audit evidence relevant to management's responses may be obtained by evaluating those responses, taking into account the auditor's understanding of the entity and its environment and other audit evidence obtained during the course of the audit.

.A29 The need to perform other audit procedures may arise when, for example, management is unable to provide an explanation, or the explanation, together with the audit evidence obtained relevant to management's response, is not considered adequate.

Documentation (Ref: par. .08)

.A30 Section 230, *Audit Documentation*, addresses the auditor's responsibilities for preparing audit documentation and applies to substantive analytical procedures and analytical procedures performed near the end of the audit. Paragraph .08 of this section addresses specific requirements that apply to substantive analytical procedures but is not intended to provide a complete list of items that are required to be documented by section 230.

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[12] Paragraph .32 of section 315.

