INTERNATIONAL STANDARD ON AUDITING 520

ANALYTICAL PROCEDURES

(Effective for audits of financial statements for periods beginning on or after December 15, 2004)*

CONTENTS

International Standard on Auditing (ISA) 520, "Analytical Procedures" should be read in the context of the "Preface to the International Standards on Quality Control, Auditing, Review, Other Assurance and Related Services," which sets out the application and authority of ISAs.

AUDITING

* ISA 315, "Understanding the Entity and Its Environment and Assessing the Risks of Material Misstatement," ISA 330, "The Auditor's Procedures in Response to Assessed Risks," and ISA 500, "Audit Evidence" gave rise to conforming amendments to ISA 520. The conforming amendments are effective for audits of financial statements for periods beginning on or after December 15, 2004 and have been incorporated in the text of ISA 520.

Introduction

1. The purpose of this International Standard on Auditing (ISA) is to establish standards and provide guidance on the application of analytical procedures during an audit.

2. **The auditor should apply analytical procedures as risk assessment procedures to obtain an understanding of the entity and its environment and in the overall review at the end of the audit.** Analytical procedures may also be applied as substantive procedures.

3. "Analytical procedures" means evaluations of financial information made by a study of plausible relationships among both financial and non-financial data. Analytical procedures also encompass the investigation of identified fluctuations and relationships that are inconsistent with other relevant information or deviate significantly from predicted amounts.

Nature and Purpose of Analytical Procedures

4. 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 with industry averages or with other entities of comparable size in the same industry.

5. Analytical procedures also include consideration of relationships:
   - Among elements of financial information that would be expected to conform to a predictable pattern based on the entity's experience, such as gross margin percentages.
   - Between financial information and relevant non-financial information, such as payroll costs to number of employees.

6. Various methods may be used in performing the above audit procedures. These range from simple comparisons to complex analyses using advanced statistical techniques. Analytical procedures may be applied to consolidated financial statements, financial statements of components (such as subsidiaries, divisions or segments) and individual elements of financial information. The auditor's choice of audit procedures, methods and level of application is a matter of professional judgment.

7. Analytical procedures are used for the following purposes:

   (a) As risk assessment procedures to obtain an understanding of the entity and its environment (paragraphs 8-9).

   (b) As substantive procedures when their use can be more effective or efficient than tests of details in reducing the risk of material misstatement at the assertion level to an acceptably low level (paragraphs 10-19).

   (c) As an overall review of the financial statements at the end of the audit (paragraph 13).

Analytical Procedures as Risk Assessment Procedures

8. **The auditor should apply analytical procedures as risk assessment procedures to obtain an understanding of the entity and its environment.** Application of analytical procedures may indicate aspects of the entity of which the auditor was unaware and will assist in assessing the risks of material misstatement in order to determine the nature, timing and extent of further audit procedures.

9. Analytical procedures applied as risk assessment procedures use both financial and non-financial information, for example, the relationship between sales and square footage of selling space or volume of goods sold. Paragraph 10 of ISA 315, "Understanding the Entity and Its Environment and Assessing the Risks of Material Misstatement" contains additional guidance on applying analytical procedures as risk assessment procedures.

Analytical Procedures as Substantive Procedures

10. The auditor designs and performs substantive procedures to be responsive to the related assessment of the risk of material misstatement at the assertion level. The auditor's substantive procedures at the assertion level may be derived from tests of details, from substantive analytical procedures, or from a combination of both. The decision about which audit procedures to use to achieve a particular audit objective is based on the auditor's judgment about the expected effectiveness and efficiency of the available audit procedures in reducing the assessed risk of material misstatement at the assertion level to an acceptably low level.

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

12. When designing and performing analytical procedures as substantive procedures, the auditor will need to consider a number of factors such as the following:

- The suitability of using substantive analytical procedures given the assertions (paragraphs 12a and 12b).
- The reliability of the data, whether internal or external, from which the expectation of recorded amounts or ratios is developed (paragraphs 12c and 12d).
- Whether the expectation is sufficiently precise to identify a material misstatement at the desired level of assurance (paragraph 12e).
- The amount of any difference of recorded amounts from expected values that is acceptable (paragraph 12f).

Suitability of Using Substantive Analytical Procedures Given the Assertions

12a. Substantive analytical procedures are generally more applicable to large volumes of transactions that tend to be predictable over time. The application of substantive analytical procedures is based on the expectation that relationships among data exist and continue in the absence of known conditions to the contrary. The presence of these relationships provides audit evidence as to the completeness, accuracy and occurrence of transactions captured in the information produced by the entity's information system. However, reliance on the results of substantive analytical procedures will depend on the auditor's assessment of the risk that the analytical procedures may identify relationships as expected when, in fact, a material misstatement exists.

12b. In determining the suitability of substantive analytical procedures given the assertions, the auditor considers the following:

(a) *The assessment of the risk of material misstatement.* The auditor considers the understanding of the entity and its internal control, the materiality and likelihood of misstatement of the items involved, and the nature of the assertion in determining whether substantive analytical procedures are suitable. For example, if controls over sales order processing are weak, the auditor may place more reliance on tests of details rather than substantive analytical procedures for assertions related to receivables. As another example, when inventory balances are material, the auditor ordinarily does not rely only on substantive analytical procedures when performing audit procedures on the existence assertion. ISA 330, "The Auditor's Procedures in Response to Assessed Risks" indicates that, when the approach to significant risks consists only of substantive procedures, the audit procedures appropriate to address such significant risks consist of tests of details only, or a combination of tests of details and substantive analytical procedures.

(b) *Any tests of details directed toward the same assertion.* Substantive analytical procedures may also be considered appropriate when tests of details are performed on the same assertion. For example, when auditing the collectibility of accounts receivable, the auditor may apply substantive analytical procedures to an aging of customers' accounts in addition to tests of details on subsequent cash receipts.

The Reliability of the Data

12c. The reliability of data is influenced by its source and by its nature and is dependent on the circumstances under which it is obtained. In determining whether data is reliable for purposes of designing substantive analytical procedures, the auditor considers the following:

(a) *Source of the information available.* For example, information is ordinarily more reliable when it is obtained from independent sources outside the entity.

(b) *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) *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.* For example, controls over the preparation, review and maintenance of budgets.

12d. The auditor considers testing the controls, if any, over the entity's preparation of information used by the auditor in applying substantive analytical procedures. When such controls are effective, the auditor has greater confidence in the reliability of the information and, therefore, in the results of substantive analytical procedures. The controls over non-financial information can often be tested in conjunction with other tests of controls. For example, an entity in establishing controls over the processing of sales invoices may include controls over the recording of unit sales. In these circumstances, the auditor could 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 in the current or prior period. In determining the audit procedures to apply to the information upon which the expectation for substantive analytical procedures is based, the auditor considers the guidance in paragraph 11 of ISA 500, "Audit Evidence."

Whether the Expectation is Sufficiently Precise

12e. In assessing whether the expectation can be developed sufficiently precise to identify a material misstatement at the desired level of assurance, the auditor considers factors such as the following:

- *The accuracy with which the expected results of substantive analytical procedures can be predicted*. For example, the auditor will ordinarily 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.
- *The availability of the information*, *both financial and non-financial.* For example, the auditor considers whether financial information, such as budgets or forecasts, and non-financial information, such as the number of units produced or sold, is available to design substantive analytical procedures. If the information is available, the auditor also considers the reliability of the information as discussed in paragraphs 12c and 12d above.

Amount of Difference of Recorded Amounts from Expected Values that is Acceptable

12f. In designing and performing substantive analytical procedures, the auditor considers the amount of difference from expectation that can be accepted without further investigation. This consideration is influenced primarily by materiality and the consistency with the desired level of assurance. Determination of this amount involves considering the possibility that a combination of misstatements in the specific account balance, class of transactions, or disclosure could aggregate to an unacceptable amount. The auditor increases the desired level of assurance as the risk of material misstatement increases by reducing the amount of difference from the expectation that can be accepted without further investigation. Paragraphs 17 and 18 below discuss the auditor's response when the amount of difference between the expected value and the reported value exceeds the amount that can be accepted without further investigation.

12g. When the auditor performs substantive procedures at an interim date and plans to perform substantive analytical procedures with respect to the intervening period, the auditor considers how the matters discussed in paragraphs 12a-12f affect the ability to obtain sufficient appropriate audit evidence for the remaining period. This includes considering whether the period end balances of the particular classes of transactions or account balances are reasonably predictable with respect to amount, relative significance, and composition. See ISA 330, paragraphs 56-61, for additional guidance.

Analytical Procedures in the Overall Review at the End of the Audit

13. **The auditor should apply analytical procedures at or near the end of the audit when forming an overall conclusion as to whether the financial statements as a whole are consistent with the auditor's understanding of the entity.** The conclusions drawn from the results of such audit procedures are intended to corroborate conclusions formed during the audit of individual components or elements of the financial statements and assist in arriving at the overall conclusion as to the reasonableness of the financial statements. However, they may also identify a previously unrecognized risk of material misstatement. In such circumstances, the auditor may need to re-evaluate the planned audit procedures, based on the revised consideration of assessed risks for all or some of the classes of transactions, account balances, or disclosures and related assertions.

14.-16. Paragraphs 14-16 were deleted when the *Audit Risk Standards*[1] became effective.

Investigating Unusual Items

17. **When analytical procedures identify significant fluctuations or relationships that are inconsistent with other relevant information or that deviate from predicted amounts, the auditor should investigate and obtain adequate explanations and appropriate corroborative audit evidence.**

18. The investigation of unusual fluctuations and relationships ordinarily begins with inquiries of management, followed by:

    (a) Corroboration of management's responses, for example, by comparing them with the auditor's understanding of the entity and other audit evidence obtained during the course of the audit; and

    (b) Consideration of the need to apply other audit procedures based on the results of such inquiries, if management is unable to provide an explanation or if the explanation is not considered adequate.

AUDITING

[1] The *Audit Risk Standards* comprise ISA 315, "Understanding the Entity and Its Environment and Assessing the Risks of Material Misstatement," ISA 330, "The Auditor's Procedures in Response to Assessed Risks," and ISA 500, "Audit Evidence." The *Audit Risk Standards* gave rise to conforming amendments to this and other ISAs.

Public Sector Perspective

1. *The relationships between individual financial statement items traditionally considered in the audit of business entities may not always be appropriate in the audit of governments or other non-business public sector entities; for example, in many such public sector entities there is often little direct relationship between revenues and expenditures. In addition, because expenditure on the acquisition of assets is frequently non-capitalized, there may be no relationship between expenditures on, for example, inventories and fixed assets and the amount of those assets reported in the financial statements. In addition, in the public sector, industry data or statistics for comparative purposes may not be available. However, other relationships may be relevant, for example, variations in the cost per kilometer of road construction or the number of vehicles acquired compared with vehicles retired. Where appropriate, reference has to be made to available private sector industry data and statistics. In certain instances, it may also be appropriate for the auditor to generate an in-house database of reference information.*