

# ANALYTICAL PROCEDURES

RELEVANT TO ACCA QUALIFICATION PAPERS F8 AND P7 AND CAT PAPER 8

‘The auditor shall design and perform audit procedures that are appropriate in the circumstances for the purpose of obtaining sufficient appropriate audit evidence.’ (ISA/HKSA 500(6))

**To obtain audit evidence, the auditor performs one – or a combination – of the following procedures:**

- inspection
- observation
- external confirmation
- inquiry
- reperformance
- recalculation
- analytical procedures.

It is mandatory that the auditor should perform risk assessment for the identification and assessment of risks of material misstatement at the financial statement and assertion level, and the risk assessment procedures should include analytical procedures (ISA/HKSA 315(6b)). It is also mandatory that the auditor should perform analytical procedures near the end of the audit that assess whether the financial statements are consistent with the auditor’s understanding of the entity (ISA/HKSA 520(6)).

Analytical procedures are also commonly used in non-audit and assurance engagements, such as reviews of prospective financial information, and non-audit reviews of historical financial information. While the use of analytical procedures in such engagements is not covered in the ISAs, the principals regarding their use are relevant.

#### DEFINITION OF ANALYTICAL PROCEDURES

Analytical procedures consist of ‘evaluations of financial information through analysis of plausible relationships among both financial and non-financial data’. They also encompass ‘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’ (ISA/HKSA 520(4)). 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 conditions to the contrary.

#### PURPOSES OF ANALYTICAL PROCEDURES

Analytical procedures are used throughout the audit process and are conducted for three primary purposes:

- 1 **Preliminary analytical review – risk assessment** (required by ISA/HKSA 315(6b))  
Preliminary analytical reviews are performed to obtain an understanding of the business and its environment (eg financial performance relative to prior years and relevant industry and comparison groups), to help assess the risk of material misstatement in order to determine the nature, timing and extent of audit procedures, ie to help the auditor develop the audit strategy and programme.
- 2 **Substantive analytical procedures**  
Analytical procedures are used as substantive procedures when the auditor considers that the use of analytical procedures can be more effective or efficient than tests of details in reducing the risk of material misstatements at the assertion level to an acceptably low level.
- 3 **Final analytical review** (required by ISA/HKSA 520(6))  
Analytical procedures are performed as an overall review of the financial statements at the end of the audit to assess whether they are consistent with the auditor’s understanding of the entity. Final analytical procedures are not conducted to obtain additional substantive assurance. If irregularities are found, risk assessment should be performed again to consider any additional audit procedures are necessary.

#### USE OF SUBSTANTIVE ANALYTICAL PROCEDURES

One of the objectives of ISA 520 is that relevant and reliable audit evidence is obtained when using substantive analytical procedures. The primary purpose of substantive analytical procedures is to obtain assurance, in combination with other audit testing (such as tests of controls and substantive tests of details), with respect to financial statement assertions for one or more audit areas. Substantive analytical procedures are generally more applicable to large volumes of transactions that tend to be more 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. Due to their nature, substantive analytical procedures can often provide evidence for multiple assertions, identify audit issues that may not be apparent from more detailed work, and direct the auditor’s attention to areas requiring further investigation. Furthermore, the auditor may identify risks or deficiencies in internal control that had not previously been identified, which may cause the auditor to re-evaluate his planned audit approach and require the auditor to obtain more assurance from other substantive testing than originally planned.

To derive the most benefit from substantive analytical procedures, the auditor should perform substantive analytical procedures before other substantive tests because results of substantive analytical procedures often impact the nature and extent of detailed testing. Substantive analytical procedures might direct attention to areas of increased risk, and the assurance obtained from effective substantive analytical procedures will reduce the amount of assurance needed from other tests.

There are four elements that comprise distinct steps that are inherent in the process to using substantial analytical procedures:

#### STEP 1:

##### Develop an independent expectation

The development of an appropriately precise, objective expectation is the most important step in effectively using substantive analytical procedures. An expectation is a prediction of a recorded amount or ratio. The prediction can be a specific number, a percentage, a direction or an approximation, depending on the desired precision.

## ANALYTICAL PROCEDURES CONSIST OF 'EVALUATIONS OF FINANCIAL INFORMATION THROUGH ANALYSIS OF PLAUSIBLE RELATIONSHIPS AMONG BOTH FINANCIAL AND NON-FINANCIAL DATA'.

The auditor should have an independent expectation whenever s/he uses substantive analytical procedures (ISA/HKSA 520(5c)). The auditor develops expectations by identifying plausible relationships (eg between store square footage and retail sales, market trends and client revenues) that are reasonably expected to exist based on his knowledge of the business, industry, trends, or other accounts.

### STEP 2:

#### Define a significant difference (or threshold)

While designing and performing substantive analytical procedures the auditor should consider the amount of difference from the expectation that can be accepted without further investigation (ISA/HKSA 520(5d)). The maximum acceptable difference is commonly called the 'threshold'.

Thresholds may be defined either as numerical values or as percentages of the items being tested. Establishing an appropriate threshold is particularly critical to the effective use of substantive analytical procedures. To prevent bias in judgment, the auditor should determine the threshold while planning the substantive analytical procedures, ie before Step 3, in which the difference between the expectation and the recorded amount are computed.

The threshold is the acceptable amount of potential misstatement and therefore should not exceed planning materiality and must be sufficiently small to enable the auditor to identify misstatements that could be material either individually or when aggregated with misstatements in other disaggregated portions of the account balance or in other account balances.

### STEP 3:

#### Compute difference

The third step is the comparison of the expected value with the recorded amounts and the identification of significant differences, if any. This should be simply a mechanical calculation.

It is important to note that the computation of differences should be done after the consideration of an expectation and threshold. In applying substantive analytical procedures, it is not appropriate to first compute differences from prior-period balances and then let the results influence the 'expected' difference and the acceptable threshold.

### STEP 4:

#### Investigate significant differences and draw conclusions

The fourth step is the investigation of significant differences and formation of conclusions (ISA/HKSA 520(7)). Differences indicate an increased likelihood of misstatements; the greater the degree of precision, the greater the likelihood that the difference is a misstatement.

Explanations should be sought for the full amount of the difference, not just the part that exceeds the threshold. There is a chance that the unexplained difference may indicate an increased risk of material misstatement. The auditor should consider whether the differences were caused by factors previously overlooked when developing the expectation in Step 1, such as unexpected changes in the business or changes in accounting treatments.

If the difference is caused by factors previously overlooked, it is important to verify the new data, to show what impact this would have on the original expectations as if this data had been considered in the first place, and to understand any accounting or auditing ramifications of the new data.

### KEY FACTORS AFFECTING THE PRECISION OF ANALYTICAL PROCEDURES

There are four key factors that affect the precision of analytical procedures:

#### 1 Disaggregation

The more detailed the level at which analytical procedures are performed, the greater the potential precision of the procedures. Analytical procedures performed at a high level may mask significant, but offsetting, differences that are more likely to come to the auditor's attention when procedures are performed on disaggregated data.

The objective of the audit procedure will determine whether data for an analytical procedure should be disaggregated and to what degree it should be disaggregated. Disaggregated analytical procedures can be best thought of as looking at the composition of a balance(s) based on time (eg by month or by week) and the source(s) (eg by geographic region or by product) of the underlying data elements. The reliability of the data is also influenced by the comparability of the information available and the relevance of the information available.

#### 2 Data reliability

The more reliable the data is, the more precise the expectation. The data used to form an expectation in an analytical procedure may consist of external industry and economic data gathered through independent research. The source of the information available is particularly important. Internal data produced from systems and records that are covered by the audit, or that are not subject to manipulation by persons in a position to influence accounting activities, are generally considered more reliable.

### 3 Predictability

There is a direct correlation between the predictability of the data and the quality of the expectation derived from the data. Generally, the more precise an expectation is for an analytical procedure, the greater will be the potential reliability of that procedure. The use of non-financial data (eg number of employees, occupancy rates, units produced) in developing an expectation may increase the auditor's ability to predict account relationships. However, the information is subject to data reliability considerations mentioned above.

### 4 Type of analytical procedures

There are several types of analytical procedures commonly used as substantive procedures and will influence the precision of the expectation. The auditor chooses among these procedures based on his objectives for the procedures (ie purpose of the test, desired level of assurance).

- i Trend analysis – the analysis of changes in an account over time.
- ii Ratio analysis – the comparison, across time or to a benchmark, of relationships between financial statement accounts and between an account and non-financial data.
- iii Reasonableness testing – the analysis of accounts, or changes in accounts between accounting periods, that involves the development of a model to form an expectation based on financial data, non-financial data, or both.

Each of the types uses a different method to form an expectation. They are ranked from lowest to highest in order of their inherent precision. Scanning analytics are different from the other types of analytical procedures in that scanning analytics search within accounts or other entity data to identify anomalous individual items, while the other types use aggregated financial information.

THE MORE PRECISION INHERENT IN AN ANALYTICAL PROCEDURE USED, THE GREATER THE POTENTIAL RELIABILITY OF THAT PROCEDURE.

If the auditor needs a high level of assurance from a substantive analytical procedure, s/he should develop a relatively precise expectation by selecting an appropriate analytical procedure (eg a reasonableness test instead of a simple trend or 'flux' analysis). Thus, determining which type of substantive analytical procedure to use is a matter of professional judgment.

In summary, there is a direct correlation between the type of analytical procedure selected and the precision it can provide. Generally, the more precision inherent in an analytical procedure used, the greater the potential reliability of that procedure.

#### Key messages:

- ▣ Substantive analytical procedures play an important part in a risk-based audit approach.
- ▣ Properly designed and executed analytical procedures can allow the auditor to achieve audit objectives more efficiently by reducing or replacing other detailed audit testing.
- ▣ The effectiveness of analytical procedures depends on the auditor's understanding of the entity and its environment and the use of professional judgment; therefore, analytical procedures should be performed or reviewed by senior members of the engagement team.
- ▣ It is vital that the analytical procedures be sufficiently documented to enable an experienced auditor, having no previous connection with the audit, to understand the work done (ISA/HKSA 230(8)).

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