

DATA ANALYTICS: THE KEY TO RISK-BASED AUDITING



CASEWARE
ANALYTICS

TRADITIONAL VERSUS RISK-BASED AUDITS

To ensure organizations reach their objectives, it is imperative that internal audit reviews the controls in place to reduce the risks their companies face. In order to distinguish this process from 'traditional' internal auditing, the term 'risk-based internal auditing' was coined.

Risk-based internal auditing begins by first assessing an organization's objectives and providing an opinion as to whether internal controls are reducing the risks threatening them to acceptable levels. Based on the opinions formed, it is then determined if those objectives will be achieved. In contrast, traditional internal audit is limited to considering the controls over financial, fraud and possibly IT risks as well.

Today, risk-based internal auditing is the standard expected for internal auditing. According to the [Chartered Institute of Internal Auditors](#), risk-based internal auditing allows internal audit to conclude that:

1. Management has identified, assessed and responded to risks above and below the risk appetite
2. Responses to risks are effective but not excessive in managing inherent risks within the risk appetite
3. Action is being taken to correct situations where residual risks are not in line with the risk appetite


4. Risk management processes, including the effectiveness of responses and the completion of actions, are being monitored by management to ensure they continue to operate effectively
5. Risks, responses and actions are being properly classified and reported

In this white paper, we will look at how auditors can assess, respond to and analyze the risks they encounter during a risk-based audit.

ASSESSING RISK

Current standards require auditors to gain a thorough understanding of the organization's industry and environment, including its internal controls. The risk assessment procedures required include inquiries of management and others, observations and inspections to support the responses to the inquiries, and analytical procedures. Data analysis can be used to analyze information for comparison with industry data that might be publicly available.

In cases where a client has multiple product lines, it might be necessary to obtain sales and cost details by product line for better comparisons or to explain variations from public domain benchmarks.



Inquiries of management about the accounting system, initiation and recording of the various kinds of transactions, and areas where estimates are required, are necessary procedures. Since the trial balance is the normal source for financial statement preparation, the auditor should obtain a year-to-date general ledger detail report and perform forensic-type analysis to gain an understanding of transaction flows. With data analysis software and an electronic version of the report, these types of procedures are powerful and provide substantial information in helping to understand the client's financial environment.

For example, all transactions for the period can be summarized by account and by journal source. A quick review of the results can tell the auditor such things as:

- What types of entries exist
- Whether there are a high number of manual journal entries and what accounts are most often affected
- Volume of activity in loan accounts
- Whether excessive credits that are not from an accounts receivable posting source are included in accounts receivable
- Whether excessive debits that are not from an accounts receivable posting source are included in revenues
- Whether the ledger balances and how many transactions are included in each account

With this detailed analysis, auditors can identify significant recorded activities that might represent risks, ask more specific questions, and gain an understanding of the environment. Comparing this type of summarization with a similar summary from the prior year will help the auditor know more about changes during the year and be able to narrow the scope of items to consider for the current year.

It's been said that an audit both begins and ends with materiality—the threshold amount an auditor begins with in deciding what scope to set in performing the risk assessment and further audit procedures. Tolerable misstatement is the amount an account balance can be off without causing a material misstatement in the financial statements. While no specific formula is provided in the most recent auditing standards, amounts must be set while planning the audit. They must be based on the auditor's quantitative and qualitative judgment, and take into consideration the users of the financial statements. Appropriate reasoning must be documented in the work papers.

Because data analysis software has no limit in how much data can be imported for review, stratifications or data population profiles can help identify individually significant items and groups of items that are also significant. They can also provide documentation to support the basis of the auditor's judgment when planning the audit strategy.

FRAUD RISK ASSESSMENTS — SAS 99 OR ISA 240

Throughout the planning process, the risk assessment includes considering risks that fraud may have occurred. The auditing standard for fraud risk assessment requires auditors to ask what can go wrong and how could management intentionally cause a material misstatement in each significant area of the financial statements.

Fraud risk factors outlined in the standards are related to the fraud “triangle” of pressures or incentives, opportunities and rationalizations. In addition to the inquiries required, the auditor must perform specific analyses to help identify potential fraud or respond to all identified risk factors. The procedures listed below are taken from the applicable audit standards and their appendices. Data analysis software is a critical tool for effectively performing these procedures.

- Analyze unusual or unexpected relationships identified in earlier analytical procedures
- Perform disaggregated analysis of revenue (by month or quarter, by product line, etc.)
- Disaggregated analysis of expenses/expenditures and payroll
- Identify and test journal entries made at the end of reporting periods and other unusual entries
- Identify accounting estimates for review; analyze underlying details
- Perform cut-off procedures at period end
- Compare inventory quantities for current period with prior periods by class or category of inventory, location or other criteria, or comparison of quantities counted with perpetual records
- Use computer-assisted audit techniques (CAATs) to further test the compilation of the physical inventory counts
- Perform a computerized match of the vendor list with a list of employees to identify matches of addresses or phone numbers
- Perform a computerized search of payroll records to identify duplicate addresses, employee identification or taxing authority numbers or bank accounts
- Analyze sales discounts and returns for unusual patterns or trends
- Review the propriety of large and unusual expenses (requires data extraction)

The Center for Audit Quality, affiliated with the American Institute of CPAs (AICPA), released a Practice Aid on Journal Entry Testing. The guide lists the following 16 queries that can be performed using data analysis software:

Find journal entries that do not balance	Find manual entries
Find gaps in journal entry number sequence	Sample journal entries (random or high dollar)
Find high-dollar journal entries	Find specific journal entries (by month, day or JE#)
Find possible duplicate account entries	Find all entries containing specific account(s)
Find round-dollar journal entries	Find all entries within a range of accounts
Show journal entry information by employee	Find post-dated entries
Find all entries made by a specific employee	Find entries with unusual (non-standard) descriptions
Show values for the 'journal entry type' code	Find entries posted on weekends

RESPONDING TO RISK ASSESSMENTS: AUDIT APPROACH

Audit Risk, or the risk of material misstatement (RMM) is often viewed as a formula:

$$RMM = \text{Inherent Risk (IR)} \times \text{Control Risk (CR)}$$

$$AR = RMM \times \text{Detection Risk (DR)}$$

The standards require that auditors link their audit procedures—the nature, timing and extent of tests they perform—to the RMM. If IR and CR are low (controls must be tested to achieve a low risk), the risk assessment procedures performed to make that determination might be sufficient to lower the auditor's risk. If they are not, or if any fraud risk factors are identified, the auditor must respond with a plan to perform additional procedures, and they should be customized to the client.

Materiality is an important concept for financial statement and other audits because the cost of examining 100% of a population would be prohibitive for clients. Some forms of sampling, such as monetary unit sampling, make use of materiality by requiring the use of tolerable and expected errors as parameters while planning the sampling application.

With large populations, data extraction is the only efficient way to make sure all individually significant items are identified.

EXAMPLE:


The following is an example of how data analysis can be used early and often to save time and minimize the risk of material misstatement:

Big Kachina, Inc. is a rapidly expanding multi-location retailer of business equipment. Total assets are \$12,000,000, including \$9,914,148 in accounts receivable. The accounts receivable aging report provided by the client showed more than \$252,000 past due by 120 days or more. An electronic version of the detailed report was obtained and further analysis helped document a decision to examine more current account receivable balances separately from those past due by 120 or more days.

In less than 20 minutes, the auditor was able to perform the following steps:

- | | |
|------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Gain a better understanding of the monitoring system for accounts receivable | 4. Isolate past due balances and summarize them and the more current balances by store, then compare and calculate the percentage of past due accounts to total by store |
| 2. Total the file and agree the balance to the client's monitoring report and general ledger balance | 5. Decide on an effective strategy to respond to the high inherent and control risk assessments |
| 3. Check (re-perform calculations) the aging report by using the due date field | |

Further tests, based on the determination of materiality, would include extraction of a sample for confirmations for the less risky accounts, and later matching of subsequent collections for those older items. Without the power and efficiency of data analysis software, the auditor might have selected accounts from the entire population and exceeded his or her budget dealing with the inevitable problems that would occur if several of them were seriously past due.



Data analysis is most suited to testing assertions of accuracy and cut-off. While it would be impossible to “find” something that is not in a database while testing for completion, the auditor can check date statistics to determine that every month is represented in the population. A test for cutoff of transactions would involve looking at subsequent payments to determine that they were recorded in the correct period.

Audit program steps should reflect the auditor's risk assessment, noting how the tests (further audit procedures) will be used to lower the risk of material misstatement, and these must be defined by the relevant assertion for the account balance. In the previous example, the valuation assertion is affected by a high risk of overstatement for net accounts receivable (or understatement of the allowance for bad debts), because of the high percentage of past due accounts. Since the work that would be done to audit the allowance account includes subsequent collections, evidence is also obtained for those accounts regarding existence. The audit evidence about existence that would come from the confirmations could be reduced in this case by segregating the population.

Since less experienced staff will normally perform the tests of details (further audit procedures) or other substantive tests in response to RMM, it is important that the audit program clearly define not only the tests to be performed, but also the process for obtaining the data, importing it into the data analysis software, and the output that will become part of the work papers. Some firms have adopted a policy of using IT specialists to acquire, import and analyze the data during an audit; however, this practice handicaps field auditors who must see the results of the test and decide what to do next. With data analysis software, simply drilling down on a questionable summarized amount can provide the evidence needed to clear or isolate the exception.

With IDEA and SmartAnalyzer, auditors can easily test for common indicators such as negative amounts, duplicates, rounded amounts and unusual descriptions on accounts receivable, general ledger, accounts payable, inventory and fixed assets data. Since the tests are pre-developed, training time for staff can be minimized.

ANALYTICAL PROCEDURES

Analytical procedures include everything from simple financial statement balance and ratio comparisons to complex correlations, time series and trend analyses; however, they also include visually scanning records to identify large and unusual items. In each case, the objective is to set an expectation, then perform the test or other procedure and compare the results to the initial expectation. Audit evidence consists of the documentation of that process, together with the auditor's conclusion about the account balance or set of transactions after explaining and corroborating the reasons for variances.

Scanning the general ledger or subsidiary accounts looking for unusual items is highly effective with data analysis software, which provides the ability to summarize the details then drill down to further investigate anything that raises concerns or questions about errors that might exist.

Following are two examples that illustrate the ability of data analysis to achieve audit effectiveness and provide added value for clients:

Analytical Procedure	Impact on Audit	Value for Client
Summarize entire year of cash disbursements by payee and compare with a similar summary from prior year.	Allows auditor to note excessive payments and payments to new payees. Auditing by exception is effective for fraud detection.	Efficiencies for check processing can be recommended in cases where excessive payments, while accurate, are wasteful for the client.
Compare inventory unit costs between years.	Lowers the cost to perform inventory testing in second and third years of an audit. Increases can be compared with expectations based on auditor's knowledge of economic trends and other factors for prices.	By analyzing all inventory items, special reports can be provided to clients that will help them see anomalies or errors in their inventory data that might not be material, but would still provide valuable action items.

If detection risk represents the chance that the auditor will miss a material error, then using analytical procedures to bring more details to the auditor's attention will help lower that risk. Performed during the risk assessment, analytical procedures result in a better understanding of the client—and the work counts as audit evidence. When performed as further audit procedures in response to identified risks, the same data can be disaggregated so that smaller amounts in groupings will allow the auditor to more easily see relationships and isolate the cause for anomalies that need to be explained.

In certain cases, data analysis can also be used to help clients and auditors recover from challenges that occur when sampling is used. If the error rate

in a sample used for substantive testing is higher than expected, the auditor can perform an analysis of the cause for misstatements identified, and use this information when deciding on how to project the errors.

For example, if an unusually high number of errors in cash disbursements data are analyzed by enterer, the auditor could summarize the sample and the population by enterer to better determine the impact the errors found have on cash disbursements.

INTERNAL CONTROL TESTING

Internal controls over the major transaction classes include manual and automated control activities that assure management's directives are carried out. In most companies today, IT significantly affects control activities, especially in the areas of authorization and segregation of duties (through passwords and other access controls), accuracy, and completeness (through IT general controls over program change control and processing controls in each significant application). Testing controls to determine reliability of details will be needed if the information system data is to be used for these kinds of analytical procedures.

Data analysis software is useful in facilitating tests of controls: it calculates sample sizes based on the desired confidence level and precision, and computes achieved confidence to help the auditor document his or her conclusions.

Sampling modules are also available to extract the sample on a random, systematic or stratified random basis. Stratified random sampling is useful if the auditor is designing a "dual-purpose test" because the sample will randomly select items from each strata per the auditor's judgment as to how many items to select from each group.

CONCLUSIONS

Auditing is an iterative process that requires the auditor's judgment to constantly evaluate the evidence and determine when procedures are sufficient to minimize audit risk. Data analysis software provides better coverage and reduction of risk than can be achieved manually or with spreadsheets alone. It is an auditor's tool for gaining an understanding of the client's systems and reporting environment; identifying anomalies, errors and potential fraud; and extracting all items of individual significance within a transaction or master file.

Accounting firms that are most successful in implementing data analysis incorporate the procedures into their audit process. They provide adequate training and support to staff, and guard against over-relying on technical specialists. They overcome the challenge of insufficient staff levels by arming their field auditors with data analysis software, which frees their IT auditors to work on others areas.

Properly implemented and integrated into the audit, data analysis can solve the dilemma of the expectations gap concerning the auditor's responsibility to detect material misstatements in the financial statements.

APPENDIX

Tests included in SmartAnalyzer:

GENERAL LEDGER TESTS

Identify journal entries that are:

- Out of balance
- Duplicates
- Missing
- Posted on weekends, specific dates or times

Reports and summaries by:

- User
- Account combinations
- Journal entries with large amounts
- Journal entries with rounded amounts
- Journal entries with amounts that end in 999
- Journal entries with specific comments
- Account number
- Period or source
- Account balances by source or period

INVENTORY TESTS

- Aging by receipt date
- Recalculate inventory balance
- Calculate inventory turnover ratio
- Calculate unit turnover ratio
- Zero or negative unit cost
- Negative quantity on hand
- Inventory location summary
- Large inventory amounts
- Inventory received around a specified date
- Last sales price lower than unit cost
- Compare sales price with unit cost
- Duplicate field search

ACCOUNTS RECEIVABLE TESTS

- Aging by due date or invoice date
- Accounts with balances or transactions exceeding credit limits
- Accounts with credit balances
- Transactions around a date range
- Duplicate transactions
- Debtor transaction summary

ACCOUNTS PAYABLE TESTS

- Aging by invoice date
- Duplicate invoices or payments
- Creditors with net debit balance
- Creditors with balances or transactions exceeding credit limits
- Creditor transaction summary
- Invoices without purchase orders
- Posted on weekends, specific dates or times
- Transactions summarized by user
- Transactions with rounded amounts
- Duplicate field search

FIXED ASSETS TESTS

- Fixed assets additions
- Asset category summary
- Recalculate straight line depreciation
- Recalculate declining balance depreciation
- Depreciation exceeding cost
- Duplicate field search



ABOUT IDEA

CaseWare IDEA® Data Analysis software is a product by CaseWare Analytics, developers of data analysis and continuous monitoring software solutions for auditors and other financial professionals. IDEA's advanced analytics, including Benford's Law and Fuzzy Duplicate, helps auditors analyze 100% of their data at the click of a button, quickly revealing patterns, trends and outliers that may be indicative of fraud or other risks. Discover why three of the top global accounting firms and 76 of the top 100 accounting firms in the United States rely on IDEA for their data analysis: visit casewareanalytics.com to schedule a free demo of IDEA.

About CaseWare Analytics

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