

Inventory – Audit Analysis and Process Improvement



Inventory, as a balance sheet item and key profit determiner, poses some unique audit challenges. In this article, we'll look at how data analysis software can help you improve the quality of your audit evidence while at the same time, provide you with opportunities to expand your client service.

Specifically, we'll review how to verify the client calculation of the inventory obsolescence provision and how prepare an analysis of inventory usage and suggest an appropriate provision. In addition you'll learn how to identify items with possible incorrect re-order levels and how to perform an analysis of profit margins on different lines.

Review of Planning Considerations

Before undertaking an engagement, you should include as part of your planning, consideration as to whether IDEA would be a suitable tool for a particular engagement or client. Success factors include:

- Sufficient transaction volume and detail. Depending on the client, inventory files - master cost files, transaction data, status reports - can often be quite large and ill suited for manual review. See the appendix to this article for a list of potential tests you can perform on inventory and related files, using IDEA.
- The ability to easily acquire copies of the client data. IDEA comes with a number of tools to assist the user in acquiring appropriate data including direct import of popular small business accounting packages such as Simply Accounting and QuickBooks.
- Properly trained and equipped staff. While IDEA is consistently rated highly for its ease of use, it is recommended that staff participate in either a 2-day introductory course or complete the self-study program in the IDEA Workbook.

If these success factors are present, IDEA can help you improve the quality and efficiency of your work, and add value to your work for your client.

Inventory Testing and Analysis

A key component in valuing inventory on hand is the calculation of the provision for obsolescence. Many clients will have adopted formulae for determining the provision. With IDEA you can check the calculation as well as verify the reasonableness of the formula used.

First steps to follow:

1. Obtain the data file from the client
2. Import the data file into IDEA using the ImportAssistant, an easy-to-use wizard that will guide you through the import process.
3. Review file statistics and agree file totals to the general ledger.

Our example file contains the following information:

Field Name	Description
PRODCODE	Product Code
DEPOT	Depot Name
QTY	Quantity on hand
AV_COST	Average cost for item
TOTALCOST	QTY * AV_COST
OBSOLETE	Obsolete = "Y"
MAX	Maximum inventory level on hand
MIN	Minimum inventory level on hand

Field Name	Description
DELQTY	Last delivery quantity
ORDERNO	Last delivery order number
DELDATED	Date of last delivery YYYYMMDD
CURSELLPRI	Current selling price
CUREFFDATE	Date selling price effective YYYYMMDD
PREVSELLPRI	Previous selling price
USAGE	Sales quantity in current year
PREVCOST	Unit cost of last purchase

After importing the file, review the field statistics for QTY and TOTALCOST. Note items for follow up including negative balances and zero quantities. Agree the Net Value for TOTALCOST to the general ledger balance.

Obsolescence testing

The next steps in this example are:

- Review field statistics for DELDATED for dates of last deliveries and follow up on any items with no dates. Note the oldest date from the statistics for use in later calculations.
- Extract all the items where OBSOLETE = "Y", negative quantity items - where $QTY < 0$, and negative value items - where $TOTALCOST < 0$.
- Confirm the total of the OBSOLETE = "Y" extraction is equal to the client's provision. Provide the client with the negative items for follow up and correction.

Some useful calculations and analysis

Having confirmed the accuracy of the client's calculation of the obsolescence provision, you can now do some analysis to test the reasonableness of the amount of the provision. A common factor in inventory valuation is the number of months' sales on hand. In the example file, we have information by product code on sales units for the year in the USAGE field. This information may always be so conveniently available; you may need to do other analysis of sales transactions to determine the relevant data.

To start the analysis, you would create a Virtual, or calculated, field representing the value of $QTY / (USAGE/12)$ to yield the number of months inventory on hand. However, you must also provide for those items with a zero value for usage. Dividing by zero will of course create an error, so we must create an alternative calculation in the event of a zero usage balance. This could be for instance, the number of months since the last delivery. This formula would then be the difference between the year end date and the value of DELDATED, divided by 30. Two "@" functions are used in these calculations, @AGE to calculate the difference between the two dates, and @IF to separate out the zero balances. While this may seem like a complicated equation, IDEA's Help system provides you with step-by-step guidance to get you to the results you are after.

Once the new field, called MONTHS in our example, has been created, you can then use the Stratification function in IDEA to generate a report of inventory values in intervals of the relevant number of months. If you and the client can agree on an appropriate formula for a provision, you can use this report to easily calculate it. You could also easily produce a graph for your client showing inventory values by months' usage.

With this calculated data, you can now provide some value added information to your client. For instance, you could use IDEA's Pivot Table to produce a report showing by location, the age bands of inventory and related provision. In this example, you could also use some of the inventory file data to review the client's automatic reordering system. This can be done by using the @Between function to identify all inventory items where the quantity on hand is either less than the MIN - minimum inventory level on hand or greater than the MAX - maximum inventory level on hand.

Another useful analysis would be to calculate the profit margin on inventory items. Again, you would use the Virtual Field option, calculated as the difference between CURSELLPRI - the current selling price and AV_COST - the average cost for the item divided by CURSELLPRI. Of course as mentioned, these values may not be so conveniently stored in your client's data but they are all values which can be derived or calculated from transaction history and master files. You can then analyze the new Virtual Field values, looking for items with negative, zero or low margins which could affect the inventory valuation.

These examples are just a few of things you can do with the power of data analysis software on your PC. It's easy and cost efficient to provide improved audit evidence along with enhanced client service. **See Appendix** for a list of some possible tests and analyses you could perform on this key audit area.

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Appendix – List of audit tests for inventory systems

Inventory can vary in volume and cost within organizations. Where inventory is a significant item, audit testing is used to provide assurance on existence, completeness (cut-off) and valuation.

Some of the common tests are:

Analysis

- Reconcile physical counts to computed amounts
- Analyze high value transactions
- Summarize and stratify turnover by stock item
- Summarize stock on-hand by group, location, type, etc
- Review product reordering volumes by item, location and vendor
- Summarize products by group, location, type, etc
- Age inventory by date of receipt

Calculations

- Generate report on products in order of profitability
- Test clerical accuracy of totals and extensions
- Determine the percentage change in sales, price and/or cost levels by product/vendor
- Assess the financial viability of LIFO versus FIFO valuation

Exception Tests

- Identify surplus or obsolete inventory by sorted turnover analysis
- Identify differences between standard costs and actual costs
- Identify stock acquired from associated companies
- Isolate inventory items with cost greater than retail price, with zero/negative quantities, or with zero/negative prices
- Isolate items where inventory quantity exceeds maximum stock levels

Gaps and Duplicates

- Test for duplicate item numbers or descriptions

Matching and Comparing

- Compare yearly volume with on-hand quantity
- Compare cost to selling price to look for valuation discrepancies
- Compare the value of physical counts to general ledger value

Sampling

- Monetary Unit or Random samples for physical verification or checking additions