

Inventory methods: stocktaking procedures in industry and trade

Inventory methods (Inventurverfahren) are the methods and processes by which companies determine the actual stock of their assets, in particular their goods and materials. For technical buyers and manufacturing companies, they are the basis for correct bookkeeping, robust planning and reliable ability to deliver. The choice of method directly affects the effort involved, data quality and informative value of the stock data.

Key facts

- Inventory methods define when, how often and by which method stock is captured, whether physically, at a fixed date or on a continuous basis.
- Commercial and tax law requirements generally require a physical stocktake; simplifications are permissible under conditions and must be assessed case by case.
- In manufacturing, the perpetual inventory and the sample inventory are the most common methods, as they keep production largely uninterrupted.
- The data quality of inventory results derives from master data maintenance, clearly defined warehouse processes and systematic evaluation, for example via a data quality report.
- Inventory results feed directly back into warehouse KPIs, planning parameters and purchase order proposals in procurement.

Definition: inventory method

An inventory method is the defined procedure by which a company determines the stock of its inventory. It covers the timing (fixed-date or deferred inventory), the frequency (annually, perpetual or by sampling) and the capture technique (counting, weighing, measuring or system-supported capture). The method must be defined before execution and documented in a traceable manner.

Distinction from stocktaking and inventory

The stocktake is the stocktaking process itself; the inventory is the resulting quantity and value listing. The inventory method, by contrast, describes the way in which this process proceeds methodologically. This distinction is practically relevant because audit and documentation requirements attach to the method: it must justify why the stock determined can be regarded as correct.

Legal framework

Commercial and tax law provisions require a stocktake at the closing date, but permit recognised simplifications, such as deferred or sample inventories and permanent inventory systems. The specific admissibility requirements are complex and must be clarified on a case-by-case basis – ideally with tax advisers or auditors. Companies should define the chosen methods in inventory policies and ensure they withstand audits.

Methods and approach to selection

The choice of method follows no rigid rules but is guided by item structure, warehouse organisation, system support and audit requirements. In practice, four basic patterns have become established, which are combined depending on the material class. What is decisive is that high stock values and critical materials receive stricter methods than low-value C-items.

Physical stocktaking inventory

In the classic form, all stock is counted in full at a fixed date. The method delivers a uniform, comparable overall picture and is considered particularly informative. The disadvantages are the high staffing requirement, frequent production or shipping stoppages and the susceptibility to errors of short-notice movements around the reference date. For small warehouses or narrowly limited item groups, it nevertheless remains a pragmatic solution.

Perpetual (continuous) inventory

The perpetual inventory captures stock continuously throughout the year, often planned by item or warehouse area. The prerequisite is clean bookkeeping of every receipt and issue, for example via warehouse management systems, barcode or RFID capture. Typically, each item is physically counted at least once a year, with A-items counted more frequently. The advantage: no inventory stoppage, ongoing stock accuracy and early detection of shrinkage or mispostings.

Sample inventory

The sample inventory uses a representative subset to draw mathematically-statistical conclusions about the overall population. It is particularly suitable for homogeneous, high-volume stock and requires statistically justified sampling functions and documented accuracy requirements. In practice it is often limited to low-value items, while high-value items remain subject to full counting. Admissibility must be verified in advance under audit and tax law.

Inventory by third parties and virtualisation

The stocktake can be delegated to third parties, such as freight forwarders or specialised service providers, provided the company does not relinquish responsibility for proper execution. In addition, modern systems enable virtualised stocktaking, in which sensor data, automated counts or telematic capture replace or supplement manual work. Here too, the following applies: methods, data sources and plausibility checks must be documented and traceable.

Process and organisation of the stocktake

An inventory method only unfolds its value through clean organisation. Typical phases are preparation, capture, checking and evaluation. Without structured process planning, counting errors, duplicate bookings and delayed corrections accumulate.

Preparation and master data basis

Before the stocktake, warehouse areas must be tidied, movements stopped or documented and count teams briefed. The prerequisite is a well-maintained item data basis: units, batches, storage locations and value parameters must be correct, otherwise the count results cannot be meaningfully posted. This is where the link to planning parameter maintenance and vendor master data creation comes in: anyone who neglects master data creates new errors with the stocktake instead of clarity.

Capture, second check and evaluation

During the capture phase, proven principles apply: separate counting and checking teams, second capture of critical items, plain-language figures rather than system quantities and clear escalation paths for discrepancies. After capture follow plausibility checks, root cause analysis of significant variances and posting. A regular data quality report helps to eliminate systematic causes such as incorrect pack contents, missing bookings on delivery schedules or unclear storage locations. The result is a valued inventory list which is further used in financial accounting and controlling.

Key KPIs for evaluating inventory methods

The success of a method is reflected in measurable KPIs. They reveal whether the chosen method matches the item structure and whether the warehouse processes support the system stock figures. The following values serve as common guideline figures and should be calibrated to the specific company.

Stock accuracy and variance ratio

Inventory record accuracy (IRA) is typically measured as the proportion of items whose count results are within tolerance. In well-organised manufacturing warehouses, values above 98 per cent are frequently used as the target figure in practice. The variance ratio relative to book value complements the quantity view and makes value losses visible.

Recurrence and cycle time

Supplementary KPIs are the average duration of the stocktake per warehouse unit, the proportion of recounted items and the proportion of unexplained variances after the posting deadline. Falling cycle times with stable accuracy show that the method combines efficiency and reliability. These values lend themselves well to integration into warehouse KPI dashboards.

Risks, controls and interfaces with procurement

Incorrect inventory results have effects far beyond accounting: they distort planning decisions, purchase order proposals and delivery capability. For buyers, inventory methods are therefore not purely an accounting matter but a quality feature of the entire supply chain.

Typical risk areas

Common causes of stock variances are incomplete bookings for goods receipts and issues, shrinkage, theft, incorrect units of measure and duplicate or missing storage locations. Particularly sensitive are critical materials and A-items, where even small variances jeopardise production and delivery schedules. Material errors also arise in connection with valuation matters – such as outdated cost prices – which impact cost driver analysis and contribution margins.

Controls and governance

Effective controls include the four-eyes principle for capture and release, documented inventory policies, systematic root cause analysis of every significant deviation and regular internal audits. In the supplier context, measures such as supplier credit checks or supplier database checks complement the control picture, because unclear ownership of consignment stocks considerably complicates the stocktake. Anyone using a supplier portal can map consignment and loan stocks transparently there and clarify allocation issues in advance.

Audit and supplier relevance

For suppliers with VMI or consignment models, the stocktake at the customer's or the supplier's premises forms part of the audit scope. A supplier audit score can map criteria such as warehouse organisation, stock evidence and inventory capability. Due diligence processes, such as those under the Corporate Sustainability Due Diligence Directive (CSDDD), also benefit from traceable stock and origin data, since material flows are hardly traceable without reliable quantity data.

Current developments: digitalisation and process integration

Inventory methods are increasingly shifting from annual large-scale events towards continuous, system-supported processes. Mobile capture, automatic identification and data integration reduce effort and sources of error. At the same time, requirements for data quality and traceability are rising.

Automated capture and data integration

Barcode, RFID and automatic weighing or counting systems capture stock without manual double entry. When these data are merged with ERP, MES and historical movements in a data lake, stock risks can be identified proactively and count plans prioritised on a risk basis. Data quality remains decisive: incorrect master records reproduce errors despite the best technology.

Risk-based count plans and the supply chain

Modern methods prioritise counts by value, criticality and historical error-proneness rather than by rigid pattern. This saves effort while maintaining informative value. In interaction with procurement, reliable stock data support purchase order proposals, planning parameters and the handling of amended delivery schedules – in short: inventory quality becomes a direct lever for delivery schedule adherence and delivery reliability.

Typical metrics

Inventory Record Accuracy (IRA): > 98%

Proportion of count results matching item records; typical target value in well-organised manufacturing warehouses

Value variance ratio: < 0.5%

Difference value relative to the book stock value; common rule-of-thumb figure in practice

Recount rate: < 5%

Proportion of items that had to be recounted after the first count

Count cycle duration: 1–3 days per warehouse area

Common guideline value for perpetual partial procedures; considerably higher for stocktaking at a fixed date

Practical example

A medium-sized mechanical engineering company with around 15,000 item numbers switched from an annual stocktaking inventory with a two-day production stoppage to a combined method: A- and B-items are counted on a perpetual basis, C-items are checked by sampling. Within one year, the recount rate fell significantly and the production stoppage was eliminated entirely.

- Introduction of a risk-based count plan based on item value and criticality
- Mobile barcode capture with immediate system posting and second capture of critical items
- Monthly data quality report for the systematic tracking of variance causes

- Reconciliation of consignment stocks with suppliers via the supplier portal before each cycle

Conclusion

Inventory methods are more than an accounting obligation: they determine the quality of the stock data on which planning, purchase order proposals and delivery capability are based. The right choice depends on item structure, system landscape and audit requirements; in practice, combinations of perpetual inventory for high-value items and sampling for the remaining assortment prove their worth. What is decisive are clean master data, documented processes and consistent root cause analysis of variances. Those who systematically feed inventory results into KPIs and supplier processes turn an obligation into a genuine control lever. Legal simplifications should be examined in advance on a case-by-case basis.

Frequently asked questions

Which inventory methods are there?

The main methods are the physical stocktaking inventory, the perpetual (continuous) inventory, the sample inventory and the deferred inventory. Supplementary options include inventory by third parties and virtualised forms with automated capture. In practice, these methods are often combined depending on the item class.

Is the perpetual inventory method permissible for tax purposes?

Yes, subject to conditions: the perpetual stock ledger must at all times provide a computationally traceable stock position, and the physical counts must be distributed so that every item is covered within a reasonable period. The exact requirements depend on the legal situation and circumstances and should be clarified with tax advisers or auditors before introduction.

What is the difference between stocktaking and inventory?

Stocktaking is the process of taking stock, i.e. counting, weighing and measuring. The inventory (stock list) is the result: the complete quantity and value listing of all assets. The inventory method, by contrast, describes the methodological approach used to carry out the stocktaking.

How often must a stocktake be carried out?

In principle, a stocktake is required at the end of the financial year; recognised simplifications permit deferred or permanent procedures in practice. Under the perpetual inventory method, each item is typically counted at least once a year, with A-items counted more frequently. The specific deadlines and admissibility depend on legal form, industry and audit scope and must be assessed on a case-by-case basis.

How can stock accuracy be improved?

Key factors are well-maintained master data, complete booking of all movements, clearly defined storage locations and mobile capture directly at the storage bin. A risk-based count plan focuses effort on high-value and critical items. In addition, a regular data quality report helps to permanently eliminate systematic causes such as incorrect pack contents or missing bookings.

What does sample inventory mean?

Under the sample inventory method, only a representative subset of the stock is physically counted, and the overall stock position is inferred statistically from the result. It requires mathematically and

statistically justified sampling functions and documented accuracy requirements. In practice it is particularly suitable for homogeneous, low-value items, while high-value items generally remain subject to full counting.