

# Inventory Turns: stock turnover as a steering variable in procurement

Inventory Turns (stock turnover) indicate how often an inventory is completely turned over within a period – usually one year. The metric links inventory levels, capital tied up and supply performance, making it a key steering variable for procurement and supply chain. In DACH industry it is regarded as an indicator of the efficiency of purchasing, replenishment planning and warehouse logistics. Those who understand and actively influence Inventory Turns reduce capital and inventory costs without jeopardising delivery reliability.

## Key facts

- Inventory Turns are typically calculated as revenue or consumption divided by average inventory.
- Typical benchmarks in series manufacturing are frequently in the range of 8 to 15 turns per year, depending on the industry considerably above or below.
- Higher turnover means less capital tied up, but usually also leaner safety stocks.
- Procurement directly influences Inventory Turns via order quantities, order intervals, minimum order quantities and delivery times.
- Return on capital employed (ROCE) and working capital are significantly determined by stock turnover.
- The metric should always be evaluated at commodity group level, otherwise industry and item differences distort it.

## Definition: Inventory Turns

Inventory Turns – frequently referred to in German as Lagerumschlag, Umschlagshäufigkeit or Umschlagsrate – describe how often the average inventory of a period is sold or consumed. The metric sets movement (sales or material consumption) in relation to the inventory held.

## Calculation basics

Two calculation methods have established themselves in practice: revenue divided by average inventory (a retail-oriented view) or material cost or cost of goods sold divided by inventory (a production-oriented view). For procurement, the cost-based variant is usually more meaningful, as no contribution margin distorts the metric. Average inventory is typically calculated from opening and closing balances or from several point-in-time values. Consistency is essential: the measure, period and inventory valuation must remain comparable across periods and sites.

- $\text{Turnover rate} = \text{consumption (or revenue)} / \text{average inventory}$
- $\text{Average inventory} = (\text{opening balance} + \text{closing balance}) / 2$
- $\text{Coverage in days} = 365 / \text{Inventory Turns}$

## Distinction from other metrics

Inventory Turns describe the flow speed of the inventory, not its absolute level. A high turnover rate alone is not a measure of success: it can also arise from lean inventories that risk supply bottlenecks and shortage costs. Days of Inventory on Hand are inversely proportional to Inventory Turns. In procurement controlling, both figures are considered together with delivery reliability and order quantity accuracy in order to make trade-offs visible.

## **Significance for procurement and supply chain**

For buyers, stock turnover is a mirror of their procurement decisions. Order quantities, order rhythm, delivery times and contract structures directly determine how quickly material flows through the warehouse.

### **Capital tied up and working capital**

Every inventory ties up capital: material value, interest, warehousing costs, insurance and write-downs. Increasing the turnover rate directly reduces the capital tied up and thereby improves working capital and return on capital. In practice, stock turnover is therefore often agreed as a joint target variable of management, finance and procurement. The prerequisite is a sound cost driver analysis showing which commodity groups and procurement rules actually drive the inventories.

### **Security of supply as a counterweight**

Fast turnover presupposes stable and short replenishment lead times. With long procurement lead times, for example for imported goods with customs clearance and transport lead times, lower turnover rates are partly structural. Procurement must therefore clarify per material class which turnover is realistic with acceptable supply. Safety-related and statutory requirements – for example documentation obligations under the Supply Chain Act for critical raw materials – can force additional inventory buffers.

## **Methods and approach for improvement**

Improving Inventory Turns is achieved systematically through demand planning, order control and contract design. Combating randomness alone rarely produces sustainable effects.

### **Demand analysis and commodity group structure**

The starting point is a sound demand analysis: which items turn over quickly, and which form permanent loops in the warehouse? A clean commodity group structure allows different turnover targets to be defined depending on material type – C items with high coverage, A items with day-precise supply. ABC and XYZ analyses help to combine consumption regularity and criticality and to derive replenishment rules from them. Old stock and slow movers are regularly identified and reduced through second-life use, resale or spare part strategies.

### **Order control and PO policy**

Order release should be quantity-optimised and rhythmic: smaller, more frequent orders increase turnover but cause more procurement effort and possibly higher freight costs. A clear PO policy defines which order quantities, order intervals and approval rules apply per commodity group. Just-in-time and consignment models formally shift the inventory to the supplier and increase the measured turnover rate – here, an honest view of the entire supply chain is required.

## Supplier and contract design

Contracts have a considerable influence on stock turnover: minimum order quantities and large packaging units force high inventories. Price revision clauses and raw material escalation clauses enable flexible reordering without having to rely on fixed prices. Framework agreements with call-off character, short delivery times and agreed safety stocks at the supplier support high turnover rates. Suitable suppliers are identified through structured supplier selection and supplier segmentation, and are committed to turnover and inventory targets in supplier annual reviews.

## Key KPIs around stock turnover

Inventory Turns never operate in isolation. In procurement controlling they are combined with further metrics to make trade-offs between capital tied up, procurement costs and supply visible.

### Key metrics at a glance

In addition to the turnover rate, days of inventory, average inventory value, shortage share and delivery reliability belong to the standard report. In addition, obsolescence rates show how much inventory is at risk of being aged or technologically outdated. On the procurement side, order quantity deviations and on-time delivery provide early indicators of later inventory developments.

### Segmented evaluation

Metrics should always be broken down by commodity group, site and supplier. A blanket figure across the entire assortment usually conceals the fact that fast-moving items compensate for a sluggish C segment. In practice, target cascades have proven their worth: turnover and coverage targets defined per commodity group, tracked in monthly reports and discussed jointly with replenishment planning and procurement in the event of deviations. The quality of master data – correct lead times, bills of material and values in the ERP system – also determines the informative value of the figures.

## Risks and controls

The pursuit of high turnover rates carries its own risks. Without control mechanisms, pseudo-optimisation arises at the expense of the ability to deliver.

### Typical mis-steering

Overly aggressive inventory reduction in practice frequently leads to supply failures, firefighting purchases at premium prices and irregular duplicate purchases. Consignment stock and billed inventory at the supplier can cosmetically improve the metric without the actual capital tied up in the supply chain falling. One-off inventory reductions at period end also distort the average value. Those who use Inventory Turns as a measure of success should therefore report delivery performance and procurement costs in the same report.

### Control instruments

Proven controls include monthly inventory valuations with ABC tracking, ageing analyses of inventory and regressions of inventory levels against sales development. Supplier assessments with delivery reliability and response time show whether the targeted lean inventories are supported by the supplier process. Digital tools such as automated replenishment, inventory alerting systems and forecast models increase the touchless rate in the ordering process and reduce manual misjudgements. Periodic supplier annual reviews serve to align inventory and turnover targets contractually and operationally.

## Current developments: digitalisation and crisis resilience

The assessment of stock turnover has shifted in recent years. After years of inventory minimisation, resilience is gaining weight – parallel supply sources and strategic buffers are once again considered legitimate.

### Digital inventory control

Modern ERP and planning systems calculate Inventory Turns almost in real time and support automated order release based on consumption figures and lead times. Predictive analytics and machine learning help to recognise demand peaks earlier and adjust inventories proactively. The data basis remains crucial: without clean master data in the master data process and consistent item masters, even advanced systems deliver distorted turnover values.

### Resilience instead of pure lean

Supply chain disruptions and raw material volatility have shown that minimal inventories are vulnerable to disruption. Many companies today work with differentiated inventory strategies: high turnover rates for standard goods, deliberate buffers for critical items – for example those with long lead times or positions classified as strategic in the Kraljic matrix. Procurement translates this classification into concrete procurement rules, safety stocks and second-source strategies.

## Typical metrics

### Inventory Turns: typically 8–15 / year (series manufacturing)

Industry-dependent; development vs. peers is more important than the absolute value.

### Days of Inventory (DOI): typically 25–45 days

Reciprocal of the turnover rate; differentiate by commodity group.

### Delivery reliability: > 95%

Counterweight to inventory reduction; if it falls, the turnover was too aggressive.

### Obsolescence rate: typically < 5% of inventory value

Proportion of at-risk or outdated inventory; indicator for slow movers.

## Practical example

A mid-sized mechanical engineering company with around €40 million in material spend identified in an inventory analysis an average turnover rate of 5 for standard parts but only 2 for electronic components. A cost driver analysis showed that large order quantities to exploit volume discounts and long replenishment lead times were the main causes. The company revised its PO policy, introduced framework agreements with call-off orders and moved safety stocks for standard goods to a consignment warehouse at the distributor. Within twelve months, the turnover for standard parts rose to typically 9 to 10, capital tied up in inventory fell significantly, while delivery reliability to production remained stable.

- ABC/XYZ analysis by commodity group with differentiated turnover targets
- Framework agreements with call-off orders instead of individual deliveries with minimum quantities
- Consignment stock for fast-moving standard parts
- Monthly inventory reporting with supplier annual reviews to track the targets

## Conclusion

Inventory Turns are one of the most meaningful metrics for the efficiency of procurement and warehousing. They show how well capital works in the material flow and link procurement decisions directly to the company's working capital. What is decisive is the differentiated view: turnover targets per commodity group, supplemented by delivery reliability and procurement costs, prevent pseudo-optimisation. Those who systematically improve order control, contract design and master data quality achieve sustainably higher turnover rates in practice. The metric should be understood as a steering instrument – not as an end in itself with the risk of bottlenecks.

## Frequently asked questions

### What are Inventory Turns and how are they calculated?

Inventory Turns (stock turnover) indicate how often the average inventory is turned over per period. The metric is typically calculated as consumption or revenue divided by average inventory. Alternatively, the reciprocal is given as days of inventory (365 divided by the turnover rate).

### What is a good stock turnover rate?

This depends heavily on the industry and product. In series manufacturing, values of typically 8 to 15 turns per year are common; in retail, often considerably higher; for special components with long lead times, considerably lower. More important than the absolute value is the development compared with its own history and with industry peers.

### How can procurement improve Inventory Turns?

Key levers are smaller and more frequent orders, framework agreements with call-off character, the avoidance of minimum order quantities, and short, reliable delivery times. A clean commodity group structure with differentiated replenishment rules and the reduction of slow movers also act directly on the metric. Consignment models formally shift inventory to the supplier and should be used with care.

### What is the difference between Inventory Turns and days of inventory?

Both metrics describe the same matter from opposite directions. Inventory Turns count the turns per year, while days of inventory indicate how long the material is held on average. They are reciprocal: 365 divided by the turnover rate gives the average days of inventory on hand.

### Why can a high stock turnover also be negative?

A very high turnover can indicate safety stocks that are too lean and increase the risk of shortages, emergency purchases and production stoppages. Seasonal effects or one-off inventory reductions can also distort the metric upwards. The turnover rate should therefore always be assessed together with delivery reliability and shortage costs.

### Are consignment stocks a good way to increase Inventory Turns?

Consignment stock improves the measured turnover rate because the inventory is held on the supplier's balance sheet. However, the actual capital tied up in the supply chain remains and is often refinanced through prices. In the long term, consignment models make sense above all when they are accompanied by leaner processes and genuine inventory synchronisation.