

Backorder rate: managing open orders in a targeted manner

The backorder rate denotes the proportion of purchase orders or customer orders that cannot be delivered on time as of the reference date and are held open as a backlog (backorder). It is a key performance indicator for on-time delivery and supply capability in procurement and sales. High values signal supply shortages, planning problems or supply chain disruptions. Those who measure the rate systematically and analyse root causes can secure service levels and sustainably maintain customer trust.

Key facts

- The backorder rate relates open, non-deliverable orders on time to all orders in the period under review.
- In practice, suppliers and buyers typically aim for values below 1–2 %; higher tolerances are also common depending on the industry.
- Causes range from supply shortages and capacity bottlenecks to unreliable delivery schedules.
- The KPI is closely linked to service level, on-time delivery and inventory management.
- Risk diversification, dual sourcing and clearly agreed service level targets are the most effective control levers.
- The rate should be reported differentiated by product family, supplier and customer, not just as an average.

Definition: backorder rate

The backorder rate is the KPI for the proportion of orders or lines that cannot be supplied at the time of measurement and have fallen into arrears. It is usually calculated as the ratio of the number or value of backorders to all orders in the period under review.

Calculation variants

In practice, no single formula has prevailed. Frequently, the number of open order lines with delivery delays is set in relation to the total number of lines. Alternatively, the value of open orders serves as the basis, which is more meaningful for buyers since shortages then become quantifiable in monetary terms. Time-related variants also exist, in which the average delay duration of backorders is recorded.

- Quantity-based: $\text{backorders} / \text{total orders} \times 100$
- Value-based: $\text{open order value in delay} / \text{total order value} \times 100$
- Time-based: average delay duration of open orders

Distinction from related KPIs

The backorder rate is not identical to the service level, which measures schedule adherence in supply. It is also not to be confused with the delivery backlog, which denotes the absolute volume of open orders,

regardless of whether a delay exists. The backorder rate focuses on which parts of the order book have already missed their deadlines.

Methods and approach: measuring and reducing the backorder rate

Effective backorder management begins with a clean data basis and ends with structured countermeasures. What is decisive is understanding the rate not as an isolated figure but as an input signal for root cause analysis and prioritisation.

Data basis and reference-date logic

First, it must be defined when an order counts as a backorder: upon exceeding the promised delivery date, the confirmed date or the customer's requested date. In practice, the supplier's confirmation has proven useful as the reference, as it compares the contractually relevant commitment versus the actual delivery. A consistent reference-date logic is important so that values remain comparable across periods. Adjustments, for example for cancelled or negotiated date changes, should be documented.

Root cause analysis and prioritisation

Elevated values usually have several categories of causes: supplier shortages, capacity bottlenecks, quality problems with blocked stock, faulty materials planning or fluctuating customer call-offs. An ABC and root cause classification per line helps identify the most effective levers. Critical lines with high value-added relevance or single-source risk are prioritised. Ideally, the backorder rate feeds into a risk diversification concept and a central risk register.

Control levers in procurement

Effective measures include safety stock for A-items, closer delivery schedule adherence with firm call-offs, dual sourcing instead of single-source management in critical segments, and active follow-up of open order confirmations. For persistent shortages, material substitution (ESG) or technical alternatives are worthwhile, as is an adjusted economic order quantity. Where contracts contain unclear delivery obligations, precise service level targets and contractual agreements on limitation of liability in the event of delay help.

Key KPIs surrounding the backorder rate

The backorder rate only unfolds its effect in combination with other KPIs. Individual values without context quickly lead to wrong conclusions.

Core KPIs in combination

In addition to the backorder rate, on-time delivery (OTIF), service level, average backorder duration and open backorder value should be recorded. Inventory coverage shows whether high backorders are being compensated by buffer stocks. A rising backorder value with a falling rate, for example, indicates a few but value-intensive shortages – usually critical single sources.

- Backorder rate (quantity- or value-based)
- On-time delivery / OTIF of the supplier
- Average delay duration of open orders
- Backorder value and ageing (ageing analysis)

Differentiation and reporting

Aggregated averages obscure shortages. Reporting by commodity group, supplier, customer and plant makes sense. Weekly backorder reviews of the top-10 items have become established, supplemented by monthly evaluations for trend monitoring. Values beyond a typical 2–3 % are regarded in many industrial sectors as requiring action; significantly stricter thresholds are usual for A-parts and customer-specific components.

Risks and controls relating to the backorder rate

Those who misinterpret the KPI or manage it only cosmetically achieve the opposite of what they intend. Controls must ensure that measured values reflect the real supply situation.

Typical misinterpretations

A common mistake is apparent improvement through date adjustments: those who generously push promised dates back lower the rate on paper without improving supply. Writing off old backorders instead of actively processing them also distorts the picture. Conversely, a low rate can be deceptive if open orders are cancelled early rather than delivered. Reliable KPIs therefore require a clear cancellation and change policy.

Supplier management and contractual instruments

The rate is suitable as a basis for discussion in supplier reviews and as a selection criterion in supplier landscape analysis. Chronically conspicuous suppliers should be placed under a supplier development plan or replaced by alternatives; supplier audit scores and sample inspection data provide the factual basis for this. In the event of persistent target misses, contractual mechanisms such as penalty clauses, escalation levels and set-off arrangements in payments help – although their concrete design should be reviewed legally on a case-by-case basis.

Prevention instead of reaction

Sustainably falling backorder rates do not arise in day-to-day business but through structured prevention: reliable demand specification, realistic call-off planning, early communication with suppliers about demand changes, and systematic single-source management with substitute source strategies. A continuous supplier discovery process to identify additional sources of supply also reduces the risk of facing a shortage without an alternative.

Current developments: the backorder rate in uncertain supply chains

Disruptions in global supply chains, raw material shortages and political uncertainties have significantly increased the importance of backorder KPIs. Procurement organisations are upgrading their planning and early warning systems accordingly.

Digital transparency and early warning

Modern ERP and supply chain systems now enable up-to-date daily backorder visibility including delivery confirmation reconciliation. AI-supported forecasts detect potential delays before they arise, transforming the backorder rate from a lagging indicator into an early warning tool. In addition, electronic tendering processes provide rapid access to alternative suppliers when shortages are foreseeable. The

innovative aspect lies in proactively avoiding backorders rather than reactively working through them.

Resilience, sustainability and procurement strategy

Increasingly, the backorder rate is also considered in the context of resilience and sustainability goals. ESG requirements, for example on recycled content, can cause additional procurement shortages in the short term if recyclable materials become scarcer or more expensive. Strategic alliances with key suppliers and reserves in the supplier landscape are the answer of many companies. It is important to make target conflicts between cost, availability and sustainability explicit and to govern them bindingly in the service level agreement.

Typical metrics

Backorder rate (quantity): < 1–2 %

Common industry benchmark; stricter targets are usual for critical A-parts

Backorder rate (value): < 1 %

A value-based view prioritises economically relevant shortages

On-time delivery (OTIF): > 95 %

Complementary KPI; high OTIF corresponds to a low backorder rate

Ø backorder duration: < 5 working days

Short delay duration is often more important than the rate itself

Practical example

A medium-sized mechanical engineering company with around 800 active suppliers noticed during quarterly reviews that its value-based backorder rate had risen over two quarters from a typical level of under 1 % to over 4 % – caused mainly by electronic components with long replenishment lead times. The team introduced a structured package of measures:

- Introduction of a weekly top-10 backorder review with escalation to senior management for critical A-items
- Establishment of secondary sources for the ten most critical assemblies, including qualification by means of sample inspection
- Negotiating binding service level targets and default provisions with key suppliers
- Adjustment of safety stocks and order quantities for long-runner items based on new demand forecasts

Conclusion

The backorder rate is more than a mere trailing indicator: it makes supply gaps visible before they lead to production stoppages or customer losses. What is decisive for its usefulness are a clean, consistent definition, differentiation by commodity groups and suppliers, and its linkage with root cause analyses. As a single value, the rate is of limited significance; in combination with on-time delivery, service level and inventory KPIs, it unfolds its full steering effect. Buyers who manage the KPI consistently combine it with supplier development, dual sourcing strategies and contractual safeguards. This turns the backorder rate from a crisis indicator into an early warning instrument of resilient procurement.

Frequently asked questions

What does the backorder rate mean?

The backorder rate indicates the proportion of orders or order lines that, as of the reference date, are past the promised delivery date and could not be supplied. It is typically calculated as the number or value of backorders in relation to all orders. High values indicate supply shortages or planning problems.

How is the backorder rate calculated?

The most common approach is: number of open, delayed order lines divided by the total number of lines in the period, multiplied by 100. Alternatively, it is calculated on a value basis in pounds/euros, which is more meaningful for procurement. A consistent definition of the reference date and the adjustment rules is essential.

What backorder rate value is acceptable?

This depends heavily on the industry and product criticality. In many industries, values below 1–2 % are considered solid; significantly stricter thresholds apply to critical A-parts. More important than the average is the analysis of critical lines and backorder duration.

How can the backorder rate be reduced?

Effective levers include safety stock for critical items, firm delivery schedules, dual sourcing instead of single sourcing, and active supplier development. In cases of persistent shortages, material substitution and adjusted order quantities help. Root cause analysis should precede any action.

What is the difference between backorder rate and service level?

The service level measures what percentage of demand can be met on time from stock or delivery. The backorder rate, by contrast, reflects the backlog of already missed deadlines. The two KPIs complement each other: a high service level typically corresponds to a low backorder rate.

What risks does backorder management involve?

Common risks include apparent improvements through generous deadline extensions, unjustified cancellations for KPI cosmetics, and knee-jerk reactions without root cause analysis. Moreover, focusing exclusively on the rate can lead to excessive inventories. Clear definitions and control processes counteract these risks.