

Commodity Index: price indices as a control instrument in technical procurement

A commodity index is a statistically determined price index that maps the price development of raw materials, standard components or traded goods over time. In technical procurement, such indices serve as an objective reference for price negotiations, sliding price formulas and supplier evaluations. They create transparency about market prices that buyers would otherwise only be able to research individually at great effort, and are frequently agreed in contracts as the basis for price adjustment clauses.

Key facts

- A commodity index transparently maps the average price development of defined raw materials or standard materials.
- Typical sources are exchange prices, industry indices and statistical offices; the contractually agreed reference is what matters.
- In practice, indices control sliding price formulas, negotiation management and budget planning in procurement.
- The choice of index must reflect the actual cost structure of the supplied part, otherwise perverse incentives arise.
- Key KPIs are the deviation between index development and purchase price as well as the share of index-linked volumes.
- Alongside the opportunities offered by transparency, there are risks such as data quality problems and one-sided price linkage.

Definition: commodity index

A commodity index is a weighted metric that measures the price development of one or more commodity groups over a reference period. It can refer to exchange-traded goods such as metals or energy, or to non-exchange-traded goods such as plastic granulates, standard sheet metal or freight rates. In procurement, it serves as a neutral reference to assess whether supplier prices follow the market or deviate from it.

Distinction from other price metrics

Unlike a national statistical office's purchasing price index, which reflects economy-wide averages, a commodity index in an industrial context is usually product- or material-related. Nor is it identical to a clean-sheet calculation, which works through the cost structure of a part from the ground up; rather, the index provides the market price trend against which such calculations are calibrated.

Typical index types in technical procurement

In practice, three groups can be distinguished: exchange indices for traded goods (for example metals, energy, agricultural commodities), manufacturer- or association-generated indices for upstream products

such as plastics or semi-finished goods, and freight and logistics indices. The closer the index is to the actual supplied part, the more meaningful it is for price discussions and negotiation management.

Methods and approach to index usage

The sensible use of a commodity index begins with the material classification of the procurement assortment and the question of which items are index-relevant at all. Suitable reference indices are then selected, the contractual basis defined and the analysis systematised.

Material classification as the starting point

First, commodity groups are assessed according to what share of the price is attributable to index-driven cost factors. For castings, the raw material share may dominate, whereas for cable-assembled modules it may be the copper and labour share. Index linkage is only worthwhile where there is a relevant, measurable cost share; otherwise it distorts the price logic. The results of material classification flow directly into the procurement strategy.

Index selection and contractual anchoring

Suitable indices should be liquid, regularly published, methodologically stable and verifiable for both parties. In framework agreements or an MSA, the reference is fixed with a base date, adjustment mechanism and frequency, frequently supplemented by thresholds below which no price adjustment takes effect at all. An award note documents which index linkage was agreed at award and provides continuity across staff changes.

Building sliding price formulas correctly

Common formulas multiply a fixed base price by a percentage share that is linked to index development. In practice, shares of 30 to 70 per cent are typically index-linked, depending on the raw material intensity of the part. Clear rules on reference dates, quantity basis and rounding are important; imprecise formulas lead to disputes and elaborate change order clauses on ongoing orders.

Key KPIs and analysis of commodity indices

A commodity index only has an effect when its development is systematically set against the company's own purchase prices and supplier demands. The following overview of metrics shows proven indicators from practice.

Core metrics of index control

The central metric is the deviation between index development and the actually agreed purchase price, often reported as the price volume variance. In addition, the share of index-linked volume and the number of open price adjustment cases show how well the mechanism works in day-to-day practice. Data quality is a prerequisite here: without consistent price, quantity and reference date data, the metrics are not reliable.

Link with supplier evaluation

Index deviations can be tracked in scorecards alongside metrics such as on-time delivery (OTD), fill rate and backorder rate. A supplier who delivers significantly below market development when the index rises deserves different strategic treatment from one who overshoots market increases. In this way the index becomes an objective input for negotiation management and supplier development.

Budget and forecast integration

Indices also lend themselves as an early indicator for planning relevance: expected price impacts on the budget can be derived from forecast index development. In practice, procurement teams combine index forecasts with safety stock and blocked stock management, so that demand quantities are planned ahead in anticipation of expected price increases without risking unnecessary capital commitment.

Risks, controls and legal framework

Index linkages have an effect in both directions: they protect against one-sided demands, but can also create their own effort and dispute risks. Control and documentation are therefore indispensable.

Selected risks

Common sources of error are an index that does not match the actual cost structure, missing thresholds that turn the smallest fluctuations into administrative effort, and poor data quality for base prices. Speculative index jumps can also trigger short-term price spikes that do not correspond to the supplier's value creation. Finally, there is the risk that negotiations are reduced to index logic and value creation or quality arguments receive insufficient attention.

Controls and procedural rules

Proven practice includes defined approval processes for price adjustments that dock onto order release, plus a four-eyes review for significant deviations. Supplier enquiries about price increases should be answered with a documented index analysis; otherwise, in response to cost pressure, quality-relevant unplanned material substitutions may occur, risking a supplier corrective action request (SCAR). Written adjustment agreements with a clearly defined effective date are standard practice.

Contractual and legal notes

Sliding price and price adjustment clauses must be sufficiently specific in content in order to be validly agreed; unclear formulas carry dispute potential. Which formulations are permissible in an individual case depends on the legal system and contract type and should be reviewed legally. These notes are general and do not constitute legal advice in individual cases.

Current developments around commodity indices

The index landscape, data basis and sustainability relevance are changing noticeably. Three developments currently shape their use in technical procurement.

Digitalisation and data quality

Market data platforms and internal procurement systems today enable largely automated linking of index levels with order and contract data. This brings content enrichment into focus: master data is enriched with index references, cost shares and contract clauses so that analyses run automatically. Robust data quality in material master data and price histories remains a prerequisite.

Sustainability and CO2-related indices

Alongside classical price indices, approaches are emerging that map the emission intensities of materials in an index-like manner, for example in the context of Science Based Targets and company-wide CO2 targets. A CO2 price can act as an internal surcharge on indexed material quantities and steer procurement decisions. For the sustainable commodity group packaging,

established price references for recyclates and virgin material already exist that can be indexed directly.

Index use in negotiation and co-creation

Modern procurement teams combine index arguments with open-book approaches and co-creation with suppliers: instead of merely pointing to market prices, cost structures are made transparent jointly. Index data then serves as an objective framework within which savings potential is unlocked through design or process optimisation. The same principle supports cost avoidance evidence towards management when index increases are deflected rather than savings achieved.

Typical metrics

Price volume variance (index vs. purchase price): ± 2 % per quarter

typical control corridor in practice; larger deviations trigger a negotiation review

Index linkage ratio: typically 20–60 % of procurement volume

significantly higher as a proportion for raw-material-intensive material groups

Lead time for price adjustment: < 30 days

from supplier request to documented approval

Data quality of price master records: > 98 %

share of reliable price and quantity data for the index analysis

Practical example

A medium-sized mechanical engineering company with a high proportion of stainless steel in its production materials was repeatedly confronted with ad hoc price increases from its suppliers, without having an objective basis for comparison. The company therefore introduced systematic index management and linked core contracts to suitable raw material references.

- Material classification of all A-parts by raw material cost share as the basis for index linkage
- Anchoring sliding price formulas with thresholds and defined reference dates in existing MSA framework agreements
- Monthly variance analysis of index vs. purchase price in the supplier scorecard alongside OTD and fill rate
- Linking price adjustment approval to order release with a documented award note

Conclusion

For technical procurement, the commodity index is a versatile control instrument: it objectifies price negotiations, makes sliding price agreements manageable and provides early indicators for planning and procurement strategy. Success depends on a precisely fitting index choice, clean contractual anchoring and reliable master data. Those who view indices in isolation miss their potential; those who interlock them with supplier evaluation, costing and sustainability goals gain real leverage. Ultimately, what matters is discipline in analysis and documentation, because only a consistently maintained index also holds up in negotiations.

Frequently asked questions

What is a commodity index?

A commodity index is a price index that measures the development of raw material or commodity group prices over time. In procurement, it serves as an objective reference for price negotiations, sliding price formulas and budget planning. It can be based on exchange-traded commodities or non-exchange-traded goods such as plastics and freight rates.

How does a sliding price formula with a commodity index work?

Part of the price remains fixed, while a percentage share is linked to index development and multiplied by the base price. In practice, typically 30 to 70 per cent of the price is index-linked, depending on the raw material share. Clearly defined reference dates, quantity bases and thresholds at which an adjustment takes effect are essential.

Which commodity indices are relevant for procurement?

Relevant indices include exchange indices for metals, energy and agricultural commodities as well as industry and association indices for upstream products such as plastics or semi-finished goods. In addition, freight and logistics indices are used. What matters is that the index reflects the actual cost structure of the supplied part and is methodologically stable and verifiable.

What are the disadvantages of index linkage in procurement?

Risks include an unsuitable index, missing thresholds, speculative spikes and high administrative effort for small fluctuations. In addition, negotiations can be reduced one-sidedly to price logic, while quality and value creation receive insufficient attention. Clear procedural rules and documented analyses minimise these risks.

How do you calculate the price deviation from the commodity index?

It is common practice to compare the percentage index change over the reference period with the percentage change in the actually agreed purchase price. The difference yields the price volume variance. Consistent reference dates and robust data quality for prices and quantities are essential, otherwise the results are not usable.

Are price adjustment clauses with index linkage legally permissible?

Sliding price and price adjustment clauses are in principle widespread, but must be sufficiently specific in content, for example with a clear index reference, formula and adjustment mechanism. Their concrete admissibility depends on the legal system and contract type and should be reviewed legally on a case-by-case basis. These notes are general and do not constitute legal advice.