

Fair shares

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Joe Martin explains how the BCIS inflation indices will help mitigate risk on construction projects

Inflation is, in former US Defence Secretary Donald Rumsfeld's term, a "known unknown".

We know that prices tend to change over time but we do not know by how much or when. This uncertainty is thus a risk when considering future expenditure. The magnitude of the risk will be exacerbated by the length, size and location of a project. The longer the project the greater the uncertainty; the larger the project the greater the monetary value of the risk, and in some parts of the globe prices are more volatile than in others.

The most common method of allowing for inflation is by use of indices. In the UK the most commonly used indices are the price adjustment formulae indices ([PAFI](#)) prepared by the Building Cost Information Service ([BCIS](#)) of [RICS](#).

A couple of notes on terminology:

- inflation adjustment clauses are referred to by different names in different contracts ? fluctuations, variation of price, price adjustment for inflation etc. ? I have referred to them in this article as 'inflation adjustment clauses'
- inflation, strictly speaking, is increases in costs as distinct from deflation, which is falling prices. However, inflation adjustment clauses in contracts are designed to deal with both. Rising prices are the norm, but with recent falls in fuel and commodity prices the impact of an inflation adjustment clause would be that the client receives the benefit of the savings, rather than the contractor.

Why allow for inflation

To ensure the best price on a contract, the risk for inflation should be taken by the party best able to manage it. Inflationary risks derived from the local market can probably be managed by a contractor and their supply chain, but the underlying inflation caused by wider pressures from the outside construction and global markets probably cannot.

So who should take the risk of inflation on a construction contract? To quote from [Crossrail's](#) procurement strategy:

"It is considered that the achievement of best affordable value will be supported by a sensible and fair allocation of risks between the parties to the contracts. Requiring contractors to take responsibility for risks which they cannot assess or manage would be likely to result in either high risk premiums, or commercial pressures caused by insufficient provision.

Who is best able to "assess and manage" the risk of inflation will vary from contract to contract depending on the client, the contractor and the work.

When should inflation adjustment clauses be considered?

- **Periods of high or uncertain inflation:** that the formulae method of price adjustment was developed in the 1970s is no surprise when you consider the levels of inflation at that time. Figure 1 shows that construction costs (labour, material and plant) rose on average over 16% per annum in the period 1972 to 1980. Over the past 10 years (2006-15) the average was less than 3%. At the moment, when some underlying costs are falling, the client might consider that it should take the risk of this benefit rather than asking contractors to build it into their prices. Figure 2 shows the recent trends in DERV, steel reinforcement, electrical goods and bricks.
- **Big projects:** where the impact of inflation is significant in monetary terms. 'Big' needs to be judged in relation to the size of the parties.
- **Long contracts:** the longer the contract the more difficult it is to predict the impact of inflation. This will apply both to projects that will take a long time and long-term contracts such as framework contracts and maintenance contracts.
- **Complex contracts:** where different contractors will work at different periods during the project.

How to allow for inflation

Before the introduction of the price adjustment formulae, inflation adjustment clauses attempted to reimburse contractors for the actual changes in their resource costs. Contractors were asked to list in their tender the current prices of the resources that they wanted to be adjusted.

One of the drivers for the introduction of formulae price adjustment was the cost both to contractors and clients of administering the old contracts, which, despite the level of detail involved, resulted in imprecise recovery and were open to abuse.

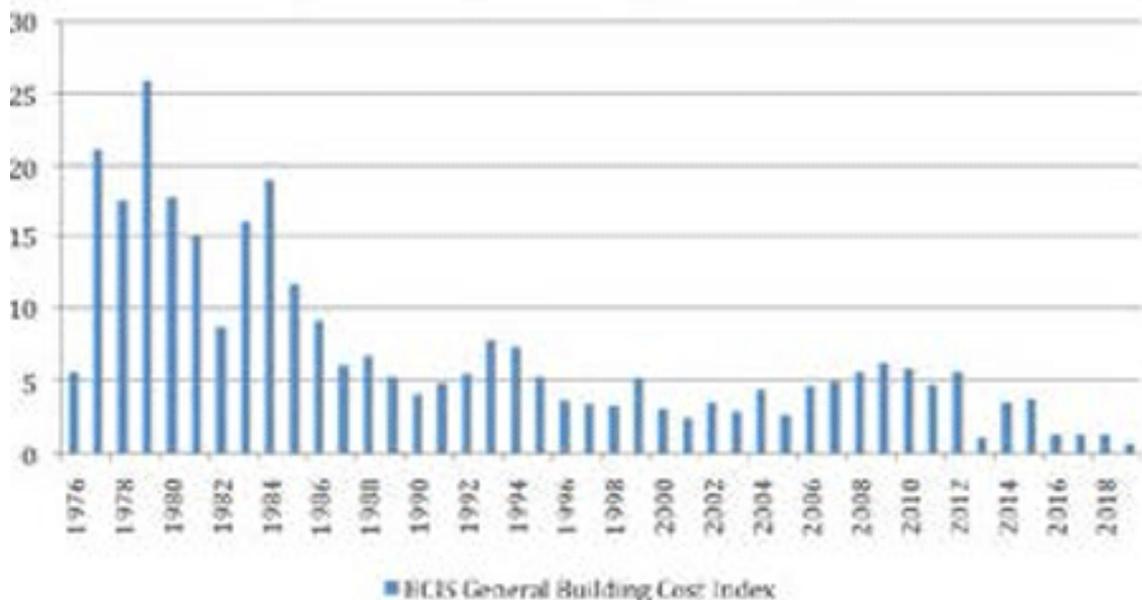


Figure 1: BCI general Building Cost Index (Annual percentage change)

The formulae method of inflation adjustment was introduced due to industry demand for a speedy, yet credible, way of calculating and reimbursing fluctuations in costs.

The method relies on resource cost indices for trades and individual resources. These can be weighted to represent the resources on a particular project so that the impact of inflation can be modelled. This allows the contractor to provide the best price in their tender, confident that the inflation reimbursement will reflect their costs.

The original guide to the formulae stated:

"There is a fundamental difference between calculating price adjustment up or down) on a range of actual costs, and calculating price adjustment by formula methods. With actual costs, price adjustment is a net amount calculated from wages sheets, invoices and the like in accordance with the contract provisions.

"Price adjustment is applied only to those materials on an agreed basic list, and there is usually no specific provision for the adjustment of overheads and profit. Formula price adjustment is calculated from the movement in index values irrespective of the actual extra costs (or savings) incurred by the contractor. Individual costs included in the buildup of a tender are not used in the price adjustment calculation. There is no need, therefore, to specify the materials subject to adjustment, no need to submit a list of basic materials prices and no need to take into account future changes in wages.

"It is important that users of formula methods of calculating price adjustment should appreciate that they do not purport to reflect, with accuracy, every minor change in construction costs or resource prices. They are a method designed to compensate the contractor reasonably for increases, and reduce the delays and labour associated with traditional methods of payment.

"The quantity surveyor or engineer should not expect their task to be translated into mere mechanical activity. Professional skill and judgement are required in the use of the formula methods. The contractor can take into account any advantages or disadvantages which they foresee in using the formula methods when building up their tender."

Weightings of indices

When the formulae method was introduced, the weightings of the indices were linked to items in the bill of quantities so that they were applied differently at each valuation. However, the alternative single index method has become the standard practice so that the weightings of the indices are set, usually by the client, at the outset of the contract and applied to all payments.

Spending time choosing the right mix of indices, and discussing it with the contractors where there is early contractor involvement or competitive dialogue, will help in ensuring that the contractors are comfortable that they are protected from underlying inflation and so offer the best current price. As Figure 2 illustrates, the cost of resources can move in very different ways.



Figure 2: Materials cost inflation - DERV, Electrical goods, Rebar, Bricks (BCIS Price Adjustment Formulae Indices - January 2010 = 100)

As the practice of using indices in inflation adjustment clauses has become standard practice, the choice of indices has proliferated, but is not always made wisely. The point of the indexation is to match the indices as closely as possible to the work to be carried out.

Therefore, using a general inflation index such as the retail prices index (RPI) or applying a general construction index to specific sectors such as the use of the all-new construction output price index (COPI) to water projects, imposes a double risk for the contractor, in terms of both the inflation measured by the index and the inflation in their actual costs.

The same applies to the practice of main contractors using an all-trades index to specific subcontractors. Applying an inappropriate index or indices will never achieve the desired effect of attracting the best prices.

Golden rules

BCIS has published 6 golden rules for choosing an index:

1. Be clear about what you want to measure and how you want to apply it.
2. Choose an index that is measuring the costs that most closely match rule 1.
3. If you are using the index linking something in a contract or agreement, be clear that it meets your needs, particularly in respect of:
 - frequency of the publication (monthly, quarterly, annual)
 - updating and revisions policy.
4. Understand the inputs to the index and the calculation methodology.
5. Read the notes and definitions.
6. Never choose an index because of its past performance.

Depending on the procurement method, the index can be applied either to the contract sum or the target cost.

PAFIs

When the formulae method of calculating fluctuations in contracts was introduced in 1973, the PAFIs were produced to facilitate its implementation.

The indices were set up under the aegis of the National Economic Development Organisation (NEDO).

The series were devised by two committees, one for civil engineering under the chairmanship of JW Baxter and one for building under JG Osborne. As a result, the PAFIs are colloquially referred to as the NEDO indices, the Baxter indices (civil engineering) and the Osborne indices (building).

The indices were initially calculated by the Property Services Agency (PSA). The responsibility for the indices followed the PSA's successor departments that are responsible for construction price and cost indices and other statistics, latterly the [Department for Business, Innovation and Skills \(BIS\)](#) . In 2009 BCIS took over the responsibility for the indices from BIS.

The indices are intended to represent the underlying inflationary pressures, not the actual costs on a particular project. However, the range of indices is intended to allow those underlying inflationary pressures to represent the resources used on a project.

The indices signify the movement in factory gate prices and nationally agreed wage awards and are for national (UK) application. They are not intended to represent the effect of market pressures, national or local, on prices from subcontractors, merchants, factors etc. The management of these is the commercial concern of the contractor.

The indices are currently published online as 4 series:

- building
- specialist engineering
- civil engineering
- highways maintenance.

The indices used in civil engineering contracts (civil engineering, specialist engineering and highways maintenance) have undergone industry review in the past 12 months by clients, contractors, subcontractors, material suppliers, consultants, the government, the [Office for National Statistics](#) and BCIS. The new series is available early this year.

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Further information

Related competencies include:

- [Design economics and cost planning](#)
- [Contract practice](#)

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