

Formula method of price adjustment of building works—Series II

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A new formula method of price adjustment has recently been introduced. It follows strong representations by the NFBTE that the original method had not made adequate provision for sub-contracting. This article describes the review that was undertaken to overcome these problems and outlines the new system which will be more sensitive to cost changes in all types of building work.

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Introduction

The formula method of price adjustment for building work was introduced in December 1973, and first used on government contracts early in 1974. The JCT published in 1975 a new clause (31F) and formula rules to enable the new system to be used in the private and local authority sectors of building. It is based upon indices for 34 categories of building work and five formulae for specialist engineering work. The new method, it was hoped, would reduce the unquantifiable risk element that had made firm price contracting virtually unworkable at least for work lasting over 12 months, the amount of administrative work associated with traditional methods and improve contractors' cash flow. Also, as the method is basically a procedure for re-valuing tender prices in accordance with changes in national average price indices of building resources, it allows recovery of increased costs on plant, overheads and preliminary items. However, as price adjustment is based on national average price movements it is unlikely that recovery will match precisely the cost increases experienced on any particular contract. Also, price adjustment is calculated on a standard list of resources with standard value weightings which again are unlikely to match those used on a particular contract. It will be appreciated from the foregoing that an element of *swings and roundabouts* must be expected with this method of price adjustment. It is to be expected that the *swings and roundabouts* will tend to cancel each other out and on average recovery should be reasonable.

When the method was first introduced, recovery under it was significantly reduced by a productivity deduction levied under counter-inflation legislation and, in addition, on public sector contracts, a non-adjustable element, both of which reintroduced a firm-price risk into a system

designed to get rid of that risk. As a result of loud and long protestations by the Federation, the productivity deduction was abolished with effect from 1 August 1976 and, on public sector contracts, the non-adjustable element has been reduced to 10 per cent.

Review of the formula method

In 1974, again under pressure from the NFBTE in collaboration with all sides of the building industry, the National Consultative Council for Building and Civil Engineering set up a standing committee on indices for building contracts; this committee enables the industry as a whole to oversee the preparation of the indices on which the formula method is based and to deal with any problems which might arise in the practical application of the method. The standing committee on indices comprises representatives of the local authority associations, main contractors (NFBTE), sub-contractors (NGSC of NFBTE, FASS and CASEC), Architects (RIBA) and Quantity Surveyors (RICS) and of the government. The chairman is a senior civil servant as the committee is responsible ultimately to a minister, but two independent vice-chairmen serve to ensure that the committee maintains its independent role. Soon after the introduction of the formula method in 1974, it became apparent that the work categories were not suitable for many types of work commonly sub-contracted and as a result sub-contractors were unwilling to enter into sub-contracts on a work category formula basis. The standing committee on indices appointed a sub-committee to investigate this problem which, after due consideration, recommended that a review of the work categories and the resources and weightings contained in them should be undertaken.

This proposal was adopted by the standing committee and consultants, Martin Barnes & Partners, were instructed to carry out a survey of the views of the industry. Contractors and sub-contractors, through NFBTE and other trade federations, provided data by analysing the prices of a selection of contracts into their components of labour, materials and plant for each type of work included in the contract, *ie* brickwork, excavation *etc.* The labour component included was for *site labour only*. The tender date for each contract was also given so that the value of resources for each contract could be adjusted to a common base month. The adjusted resource values were then expressed as percentages and averaged. A typical work category is illustrated. In all, 38 trade associations were consulted and have ratified the new set of 48 work categories and four special labour indices which have resulted from the review.

WORK CATEGORY 2/38		PLASTERING (ALL TYPES) TO WALLS AND CEILINGS
Resource	Weighting per cent	Resource index
Labour (skilled)	49	DoE special
Labour (unskilled)	22	DoE special
Plant	3	DoE special
Gypsum plaster	22	4692.500 plaster (gypsum)
Metal beading	2	3112.150 Uncoated steel sheets (other than stainless and electrical sheets)
Sand	1	1034.000 Sand and gravel delivered
Cement	1	4641.000 Cement delivered in bulk
Finishes	*	
Fillers	*	
Lime	*	*Less than 0.5 per cent weighting
<hr/> 100 per cent <hr/>		
SECTION U - PLASTERWORK AND OTHER FLOOR, WALL AND CEILING FINISHINGS		
In-situ finishings		Clauses U2 to U13 incl.
Fibrous plaster		„ U36 to U42 „

The new formula method

The general principles of operation of the method are unchanged; the essential difference is that the work categories now relate more closely to work commonly carried out by those sub-contractors whose work is not covered by the specialist engineering formulae.

Because of the method of analysis used in the review, representative items have not been identified and it has been found to be unnecessary to quantify the resources. Resources in the new work categories are expressed in percentage value terms at the Review base month of June 1976. Because the resources are not quantified

the need for basic prices of resources has not arisen.

To produce monthly work category indices it is only necessary to increase (or decrease) resource percentages (shown in the illustration) in the same proportion as the increase (or decrease) in the relevant DI index and total the adjusted percentages. The new total will be the new index for the relevant month.

To assist quantity surveyors in allocating items of work in bills of quantities to the correct work category, the relevant clauses of the Standard Method of Measurement of Building Works are appended to each work category.

As previously, the guide to the new method envisages that some clients may wish to adopt variants to the method by grouping work categories together in various ways. It is expected that government contracts may be let on work group method and the published guide will give an example of this method of operation. If a work group method is to be used, the number of groups adopted should depend on the particular circumstances. For instance, a large repetitive housing contract, where each valuation includes work in most categories might well use a single group method, whereas on a long-term unique hospital contract it would be preferable not to use a group method at all, but employ the work categories as appropriate. The general principle to be borne in mind when considering group methods is that grouping reduces the sensitivity of price adjustment, the fewer the number of groups the less the sensitivity, particularly when significant variations to the contract occur. It is most unlikely that sub-contractors would accept the passing on of the work group method; and therefore the appropriate work category or categories would be needed for sub-contracts even where the main contract is on a work group basis.

As mentioned before, the object of the review was to enable the formula method to be used more widely for sub-contracting, and provision has now been made for scaffolding sub-contracts to be let on this basis. Two new work category indices will be published each month, one covering normal scaffolding contract work, and one covering *hire only* or *run on* contracts. Due to the difficulty in identifying the value of scaffolding in main contract bills of quantities and the absence of any formalised or generally accepted valuation procedure, these work categories cannot normally be used in the main contract but will be available for scaffolding sub-contracts.

As a result of collaboration between the Federation and the Property Services Agency of the DoE, it has been possible to develop improved forms which minimise the work needed to carry out the various calculations. The forms are used for the examples which will be published in the new guide and will be on sale through the NFBTE's Publications Department. It is expected that the documents for the method will be published in the early spring of 1977 and there will be a three-month assimilation period before it is used in contracts. Although the number of work categories available for use has increased from 34 to 48 it is not expected that this will result in any significant increased administrative costs as many of the new categories are mutually exclusive. Experience with the 34 category system has shown that an average of 29 work categories is used per contract. It is expected that this figure will increase to 32 with the new 48 category system.

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