

Unbalancing of tenders

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Professor Stark demonstrates with extreme clarity a technique for dealing with what at first appears to be a very obscure problem, that of unbalancing bids in competitive tendering. However, it should be pointed out that the method of maximizing return within the constraint of an undiscounted tender price, can only be valid if the contractor alone, among all parties concerned, is making a proper economic evaluation of the tender.

18. It is of interest to consider the more sophisticated situation where all contractors submit unbalanced tenders (together with proposed construction programmes), and the client carries out a satisfactory economic evaluation of each. The undiscounted tender price then has relevance neither to the contractors nor to the client. Rather, each contractor has to judge what is a competitive discounted bid. In the Author's example, W in § 7 would then be assigned this value in advance, producing merely a further constraint on the bill rates x_1, x_2, x_3 and x_4 . An infinite number of solutions for x_1 can be found which satisfy this and the other constraints.

19. A possibility for optimization still exists however, if quantity mis-estimates are considered. Suppose the contractor has determined what he regards as more accurate quantities than those proposed by the client. He may then optimize W worked out on the basis of his revised quantities subject to the same constraint as before, that W based on the client's quantities is a competitive bid. As the Author has pointed out elsewhere,³ this procedure automatically deals with the problem of by how much the bill rate of a quantity, which has probably been underestimated by the client, should be increased. Further, for his own protection at least, the contractor should discover the sensitivity of the contract revenue to quantity mis-estimates and constrain his bill rates so that risks are minimized.

20. Obviously the client himself must consider carefully the question of quantity mis-estimates. In the absence of exact estimates, which are often expensive or impossible to obtain, the client should assess his vulnerability to mis-estimates, and if necessary impose constraints on the bill rates before going out to tender. He might also, having received tenders, test the sensitivity of the contract price to quantity mis-estimates on the basis of the bill rates actually submitted. Thus he might discover the contractors' opinions of his proposed quantities, although at this stage it would probably be too late to rectify an adverse situation.

21. Finally, if the long term effect of the application of more sophisticated tendering and appraisal techniques is considered, then it appears that the significant improvement is in the reduction of unexpected profit and loss. It should be noted that in a free competitive market, there can be no long term relative advantage between the two sides of the industry.

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Dr Graves Smith's discussion deals with conditions of validity and usage of the techniques presented, and long term effects of improved tendering practices.

23. In current practice, tenders are judged largely by the undiscounted price. Therefore, that price becomes a constraint of any terminal unbalancing procedure. Properly used, the techniques presented are likely to improve a contractor's understanding of the resources and rewards entailed in the tender at hand. While the value of such understanding may depend upon the extent to which one's competitors are

correspondingly enlightened, the validity of the method is unaffected. Therefore I find no basis for the second sentence of the Discussion.

24. The motivation for § 18 of the Discussion is removed for the above reason and the added observations that, first, virtually all contractors unbalance tenders (often, perhaps, neither consciously nor competently) and second, I consider the suggested alterations in industry practice seem improbable.

25. Subsequent paragraphs of the Discussion provide useful comments, especially those dealing with quantity mis-estimates.⁴

26. Dr Graves Smith concludes aptly that the long term effect of improved tendering practices will result 'in the reduction of unexpected profit and loss.' Such reductions result in a decrease in the resources required to execute a contract and to an increase in the likelihood that in some sense the more efficient contractor performs the job. These, indeed, are prized objectives.

Reference

4. STARK R. M. *Unbalanced highway contract tendering*. 1972, Apr. Unpublished report.