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COMMENTS ON ""ALTERNATIVE BID VARIABLES AS INSTRUMENTS OF OCS LEASING POLICY,"" BY MEAD, MOSEIDJORD AND MURAOKA

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### Author

Rothkopf, M.H.

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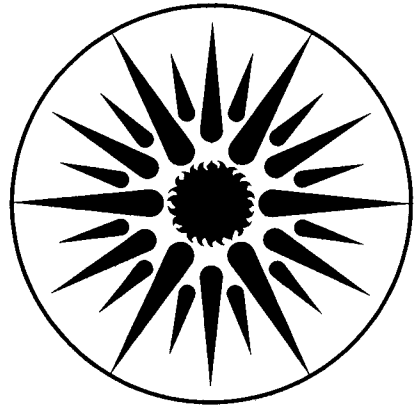
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M.H. Rothkopf

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Comments on "Alternative Bid Variables as Instruments of OCS  
Leasing Policy," by Mead, Moseidjord and Muraoka

by Michael H. Rothkopf\*

Introduction

The paper by Mead, Moseridjord and Muraoka first defines a set of criteria for evaluating leasing systems. The bulk of the paper is then devoted to evaluating the effect of cash bonus, royalty, profit share and work commitment bidding against these criteria. Finally, the paper offers two paragraphs of conclusions and policy recommendations. This comment will begin by discussing and analyzing these conclusions and recommendations. After that, it will make a number of observations and raise a number of quibbles about the bulk of the paper that do not have a major effect on the conclusions.

Discussion of Policy Recommendations

The policy conclusions are

1. The traditional method of cash bonus bidding is the preferred system. It is the most efficient system and effectively captures economic rent for the government.

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\*Lawrence Berkeley Laboratory, University of California

2. The experimental use of nontraditional bid variables mandated by the OCS Lands Act Amendments of 1978 is unnecessary.
3. Inclusion of profit share or royalty in leasing arrangements, even when they are not the bid variable, leads to a net loss to society.

Of these three conclusions, the superiority of cash bonus bidding is the most important one and I would accept it as a wise one with one major qualification. I also want to point out several observations on weaknesses in the arguments on its behalf. The major qualification relates to the level of competition. During the historical period during which bidding was analyzed by Mead et al., there was an average of 3.3 bids per tract overall and more than average competition on the more promising tracts. It is only in an environment with this degree of competition that there is evidence that cash bonus bidding captures the bulk of economic rent. According to newspaper reports, the latest OCS wide area sale had only 1.56 bids per tract bid upon. I know of no historical evidence that cash bonus bidding will capture much of the economic rent under such circumstances. For all its disadvantages, profit share bidding with high minimums might well be a superior bidding system with such a low level of competition.

As an aside, I might offer the general opinion that a low level of competition poses a rather basic problem with any of the bidding systems considered here. The proper remedy probably lies elsewhere than in choosing the best bidding variable.

Although I accept it to be probable, even the case that the traditional bonus bidding with competition at the level of 3.3 bidders per tract will in the future capture economic rents is not quite as strong as it appears. While there is a great deal of data included in the analysis of the rate of return earned by participants in past OCS sales, the law of large numbers doesn't quite apply. Here, I have three concerns. First of all, there are factors that affected the return in all of the sales and were uncertain if not completely unexpected at the time of the bidding. These include the price of crude and the windfall profits tax. Secondly, there is the "winner's curse" phenomenon. As Ed Capen, who is commenting on other papers in this session can attest, this was not well understood before 1970. Thanks in large part to Capen<sup>1</sup>, the winner's curse is better understood today and hence bidding in heavy competition may now be more restrained. Finally, while I haven't had the chance to examine them closely, I am slightly suspicious of the basis for calculating profits in OCS operations. In general, OCS operations are not carried out as the sole activity of independent economic entities. Hence, there will be some shared costs to be allocated. I suspect that for behavioral reasons at least these costs will be allocated disproportionately towards the OCS operations. The reason for this suspicion is that OCS operation is an acknowledged gamble. If lots of oil has been found, then the profits will cover the extra fixed costs. On the other hand, if luck has been bad, it's still a good place to put the fixed costs since everyone knew it was a gamble and so losses are acceptable.

The other two policy conclusions are tangential to the main thrust of the paper. Indeed, that is the heart of my main comment about them. The statement that the experiment on different bidding systems is not needed is not based on an analysis of the economics of the Congressionally mandated experiment. Rather it is based on the first conclusion that we already know that cash bonus bidding is best. I too have my doubts about the value of such experiments, but the analysis of them needs to be put into a broader framework of the gains and costs of experimentation.

The third conclusion stops just short of an explicit policy recommendation and I agree with it as far as it goes. I have no doubt that inclusion of profit share or royalty in leasing arrangements adds administrative and, perhaps, efficiency costs. So do accounting systems in a firm. However, like accounting systems, including royalty or profit share provisions in leases can produce useful information. Thus, the policy issue posed by the current practice of including royalty and/or profit sharing provisions as non-bid clauses in lease terms depends upon the value of this information relative to its cost -- an issue not addressed in this paper.

#### Other Comments

Since the discussion of the policy conclusions reached by Mead et al. is now complete, the remaining comments are, in some sense at least, all quibbles. However, some of these may be of interest with respect to other policy matters.

The five criteria presented for evaluating alternative leasing systems are good, but not quite comprehensive. I would like to see added to it

(6) The leasing system should make illegal collusion difficult and its detection easy.

(7) The leasing system should tend to lead to an efficient industry structure.

If there were evidence of significant economies of scale for firms, then all else equal, we should favor a system that leads to relatively few firms getting most tracts. On the other hand, if there were evidence that there are no such economies of scale, then all else equal, we should favor a system that spreads leases as widely as possible so as to increase competitive pressures for both efficiency and for rent capture.

The latter criterion might be viewed as an expansion of the first criterion suggested by Mead et al. -- namely that the leasing system should promote an economically efficient use of offshore resources. There is another point to be made that clearly falls within this first criterion but is an expansion of the way in which Mead et al. discussed it. Their discussion dealt with resources expended after the bids have been made. Resources are also used in preparing bids. All else equal, bidding systems that keep down the total cost of preparing all bids are preferable. Obviously factors other than choice of bid variable are at issue here, but bid variables can play a part in at least two different ways. First of all, any influence of bid variable on the number of bids prepared will have an effect. Also, bid variables such as cash bonus



that increase the risk associated with a single tract increase the incentive for better value estimates and will therefore tend to increase the expenditures on bid preparation.

On another topic. I find the curve presented by Mead, et al. as their Figure 1 to be informative and a convincing demonstration of limited diminishing economies of scale with respect to risk avoidance. However, the figure doesn't tell the whole story. There are some factors such as changes in the tax law that present a similar exposure for all tracts. The figure only shows the effects of the particular tax law outcome that the industry experienced. Second, the figure was calculated assuming an independent random selection of tracts. One suspects that there would be some tendency for firms to specialize in one kind of tract and therefore to experience somewhat more variation than the figure shows. This could be checked statistically by comparing the variations in return experienced by all firms winning between, say 10 and 15 tracts and comparing it with the prediction of Figure 1. Finally, there is the matter of the correlation between bidders' returns in the OCS and their returns elsewhere. Mead et al. mentioned this. What they don't say is that this correlation is likely to exist and to be positive. The bidders are generally in the business of exploring for and producing oil in the U.S. There are a number of common factors such as oil price and tax treatment that are common to all aspects of this business.

One final quibble: the paper argues that profit share bidding makes the government a partner and therefore "deprives the bidder of the option to negotiate a joint bid (a similar contract) with a partner of its own choice." I find this strained and unconvincing. I don't see

what it is about sharing profits with the government makes the benefits of joint ventures unavailable.

#### Concluding Comment

I have acted on the assumption that the role of commentator on a paper carries the special responsibility to probe, test and quibble. This comment so far is the results of that harassment. Let me conclude by pointing out that the generally solid nature of the paper by Mead et al. is revealed by how little of what they said is shaken by it.

#### REFERENCES

1. E.C. Capen, R.V. Clapp, and W.M. Campbell, "Competitive Bidding in High-Risk Situations," Journal of Petroleum Technology, 23, 641-651, 1971; also Society of Petroleum Engineers Paper SPE-2993, 1970.

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