## MIT SECURITY STUDIES PROGRAM SEMINAR

## Incentive Contracting in Defense Procurement

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How can incentives be created between the Department of Defense (DOD) and defense firms in defense procurement contracts? Currently, there are not many incentives for firms in defense contracts. Greater incentives can be created, however, by offering a simple menu of contracts.

The main problem with the current system for procuring defense contracts is the way in which contracts are negotiated. The DOD only offers one track for negotiations: the Truth in Negotiation Act (TINA). In a TINA contract, the sole firm estimates the cost for production and signs a certificate to its accuracy. If the firm produces the product below estimated costs, it must refund the difference to the government. The firm is subject to audit for accuracy and can face criminal prosecution if there is an unreported discrepancy favorable to the firm.

The reason for these stringent policies within the TINA contracting process is "asymmetrical information." The contractor doesn't know the exact price of manufacturing a product, the firm most likely does. TINA is designed, therefore, to protect the DOD from overpricing due to this lack of information. But, through its protective mechanisms for accurate pricing, TINA inhibits incentives for firm efficiencies. The DOD cannot monitor a firm's "unobservable effort:" how efficiently and with what quality a firm works on the product. Because all under-expenditures must be refunded to the government, the firm has no incentive to work harder and lower production costs.

TINA, therefore, functions like a cost-reimbursement contract. This type of contract probably works effectively with most defense procurements. The DOD could, however, find greater efficiency in some contracts through offering a simple and user-friendly fixed-price option.

A simple menu of contracts offers incentives in defense procurement. Within this menu, it is important to create incentives for firms in addition to offering a "back stop option" that protects the contractor (DOD), and ensures the participation of both high and low end cost firms. This is possible by offering both a fixed price contract and a TINA contract. In a fixed-price contract, the DOD would price low, but still high enough for firms to capture gains by increasing their efficiency. Because the price is fixed, the firm

keeps profits made through its unobservable efforts. The fixed price contract would be offered "take it or leave it," without certification and the threat of prosecution. If the firm opts not to take the fixed-price contract, it can still fall back on the cost-based TINA contract, the "back stop option."

The benefits of offering a fixed priced contract are several. A fixed-price contract requires that the DOD knows only the relative cost of manufacturing the product and be aware that there is 'slack' in the system; that firms can be more efficient if given incentives to do so. Furthermore, the gains of the fixed price option are mutual. The DOD saves money by capitalizing on the slack in the system and the firm earns money by maximizing on its unobservable effort. Moreover, the contractor can never be worse off given the "back stop option." The contractor will always do as well with the fixed price option as with the TINA contract or better. The fixed-price option is also very simple.

The fixed price contract is beneficial in one-year contracts and over time. Through successful negotiations and continued auditing, the contractor can learn the actual cost of production and offer a better price in future negotiations for the same product. The DOD's gains in these contracts will most likely be greater in the long run than in the short term. A firm's gains could be greater in the short-run.

A fixed-price contract is also beneficial in multi-year contracts. Currently, the DOD only offers multi-year contracts for quantity-based items produced en mass. If the firm enters into a multi-year contract at a fixed rate for a product, the incentives are very high to increase efficiencies over time and yield profits. These contracts would also offer protection to the firm if the project is canceled in subsequent years.

Furthermore, the fixed-price option encourages innovation in a firm's production. It is in a firm's best interest to work more efficiently to collect as much of the slack in the system as possible, earning more profit.

William P. Rogerson is professor of economics at Northwestern University. He has worked as chief economist at the Federal Communications Commission. He earned his Ph.D. from Cal Tech. This talk is based on his book, "The Use of Simple Menus of Contracts in Cost-Based Procurement and Regulation," 1998, mimeo.

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