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[Contractor's Investment in Work-in-Progress under Fixed-Price Government Contracts]. PSAD-77-48; B-140389. December 21, 1976. 6 pp.

Report to Sen. William Proxmire; by Elmer B. Staats, Comptroller General.

Issue Area: Federal Procurement of Goods and Services (1900).
Contact: Procurement and Systems Acquisition Div.
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Organization Concerned: Department of Defense; Department of the Air Force.
Congressional Relevance: Sen. William Proxmire.

A current study investigated contractor's investment in work-in-progress under fixed-price government contracts. An earlier study, requested by Senator William Proxmire, evaluated the impact of a proposed increase in the progress payment rates made to defense contractors. The concern was expressed that increased progress payment rates would cause a situation in future contracts where financing from sources external to the contractor would exceed the cost of work-in-progress. Findings/Conclusions: The current study used the Air Force model to process actual cash-flow data under three fixed-price contracts with three different contractors. The actual contract data showed some cases in which a higher rate of contractor investment was involved than was indicated by the simulated cash-flow data discussed in the earlier study. Only a relatively small part of this financing, however, had to be provided directly by the contractor. On the basis of the actual contract data, no increase in the rate of progress payments appears warranted. (Author/SW)

COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

B-140389

DEC 21 1976

The Honorable William Proxmire
United States Senate

Dear Senator Proxmire:

In response to your May 21, 1975, request that we evaluate the impact of a proposed increase in the progress payment rates made to contractors under Department of Defense contracts, we sent you a report (B-140389) on August 21, 1975, to which this letter refers. Defense has subsequently withdrawn its proposal to increase these rates.

In our report to you we expressed concern that some contractors might have negative investments in their work-in-process inventories under fixed-price Defense contracts. Increased progress payment rates would have caused contractors' negative investments under future contracts to be even greater. The term negative investment refers to a situation where financing from sources external to the contractor exceeds the cost of work-in-process. Financing sources used by the contractor include his own resources, Government resources, and credit provided by vendors, subcontractors, and unpaid employees. Under the various types of fixed-price Defense contracts, Government financing is largely provided by progress payments.

Our earlier concern was based on an Air Force analysis of the cash flow under a hypothetical contract using a computerized, mathematical model. In our August 1975 report, we told you that we intended to make a further study of the level of contractors' investment, in which we would review actual cash flow under selected contracts. This letter is to let you know the results of that study.

It should be noted that there is no consensus as to what are appropriate progress payment rates. It can be argued that rates should be as high as 100 percent of costs because the Government can borrow funds more cheaply than contractors. Presumably, the Government bears interest expenses incurred by contractors in financing working capital under Government contracts since it can be assumed that contractors recover these costs in the amounts they are paid a profit. Implicit in the belief that progress payment rates should be high is the assumption that profits will be lower if contractors are not required to bear any financing cost.

However, since contractors' investments in their work-in-process have an inverse relationship to progress payment rates, it can be argued that if contractors' investments are reduced below a certain level, the Government will lose some of its leverage to compel performance in accordance with the contract. This would occur because the contractors would have little to lose if their work-in-process failed to result in finished goods acceptable to the Government. Further, contractor inventory investment motivates the contractor to pay attention to the tradeoff between savings on large-lot-material purchases and the financial cost of carrying those inventories. However, the Government can assess penalties against a contractor that fails to perform and the contractor can be expected to want future Government contracts.

The current Armed Services Procurement Regulation regarding customary progress payments specifies a uniform 20/80 percent split between the contractor and the Government, respectively, in financing working capital (15/85 percent for small businesses). This rule implies that a significant contractor commitment toward financing work-in-process is desirable.

It should be noted that most Defense contractors, particularly smaller contractors, do not have contracts qualifying for progress payments. The rationale is that where contract costs are not large and delivery is made in 6 months or less (4 months or less in the case of small businesses), private financing is generally available at reasonable rates.

The subject of this report has a relationship to the research being performed by the Cost Accounting Standards Board concerning techniques for measuring costs allocable to Government contracts because of contractors' working capital investment. This research could result in the issuance of a Cost Accounting Standard recognizing imputed interest on working capital investment as a cost. Among other things, promulgation of such a Standard would be premised on the assumption that contractor working capital investment is substantial. If there is a change in progress payment policy to increase the percentage of progress payments this assumption might be invalidated and thus the need for a Standard would become questionable.

SUMMARY OF OUR FINDINGS

We used the Air Force model to process actual cash-flow data under three fixed-price contracts with three different contractors. The results showed that all three contractors had some positive investments when profit paid on partial deliveries was considered as part of the contractors' investment. As indicated

in the chart on page 5, the contractors' share of total working capital investment for these three contracts totaled from 12.9 to 17.8 percent when profit on partial deliveries was included. The remainder of the working capital investment was provided by the Government, creditors of the contractor, and bank float. (See p. 5 for a discussion of bank float). The Air Force also processed data for nine contracts and found an average contractor investment of 22 percent when profit on partial deliveries was included.

DESCRIPTION OF THE AIR FORCE CONTRACT FINANCING MODEL

A contract providing for progress payments is financed by many sources including

--Government progress payments,

--contractor's cash investment,

--profit, if partial deliveries are made,

--unpaid salaries and wages,

--amounts owed vendors and subcontractors, and

--bank float on checks written but not cleared through the contractor's bank.

The model recognizes these sources and applications of funds on a daily basis during the life of a contract. The model also accepts other constraints and variables which influence cash flow. These include

--progress payment rate,

--rate of progress payment liquidation as a result of delivery,

--frequency of progress payments,

--elapsed time between a contractor's request for and receipt of progress payments,

--elapsed time between the incurrence of various types of costs and their payments, and

--bank-float time.

The model shows the average dollar amount and percent of total financing provided by each source; i.e., contractor, profit, Government, vendors and subcontractors, labor force, and banks. It can also be used to analyze the effect of changing any of the above costraints and variables. We believe the model is conceptually sound.

RESULTS OF THE STUDY

We selected three fixed-price contracts that provided for partial deliveries which were either recently completed or more than 80 percent complete and on which actual costs were reasonably close to target cost. This study did not include shipbuilding contracts or cost-type contracts. Shipbuilding contracts provide for progress payments based on a percentage or stage of completion of the specified work completed and, under cost-type contracts, reimbursement is 100 percent of allowable costs incurred.

The contracts in the study were for three different product lines--missiles, aircraft engines, and electronics. Following is a summary of pertinent data.

	Missiles	Aircraft engines	Electronics
Percent complete at 12/31/75	83	100	83
Period of performance (months)	38	22	29
Target cost (millions)	$162	$48	$20
Progress payment rate (percent)	80	80	80

For each contract, we obtained the (1) actual costs for each accounting period during the contract performance period, (2) type of costs incurred, (3) frequency the contractor paid the various types of expenses, (4) average lag from the time checks were written until they cleared the contractor's bank, and (5) actual dates and amounts of progress payments and invoice payments that were received by the contractor from the Government.

The Air Force recently studied nine contracts with three large airframe and missile contractors. These nine contracts were selected by the three contractors and provided for a progress payment rate of 80 percent. The contractor developed and furnished data similar to that which we obtained in our study.

Financing provided in connection with the three contracts we studied and the nine contracts the Air Force studied is shown on the following page.

Percent of Financing

Financing	Missiles	Aircraft engines	Electronics	Air Force average for nine contracts
Government	77.2	68.9	71.7	68.0
Contractor sources:				
Investment	11.9	-3.2	-2.2	2.7
Profit realized on partial deliveries	5.9	16.1	15.3	19.3
Subtotal	17.8	12.9	13.1	22.0
Creditors	3.9	15.5	12.4	9.0
Bank float	1.1	2.7	2.8	1.0
	22.8	31.1	28.3	32.0
Total	100.0	100.0	100.0	100.0

There is disagreement as to whether several items we have listed above as contractor sources of capital should be considered contractor capital. For example, one view is that Government payments, including reimbursements for profit on delivered items, should be considered as financing provided by the Government. This is because the contract generated sufficient cash cash flow for contract performance without the need for the contractor to borrow funds or to use cash otherwise extraneous to the contract. The opposing view is that cash generated by profits earned by the contractor should be considered as contractor capital at the time the contractor receives the cash. This is because the profit has been earned by the contractor and is available for investment at the contractor's discretion in the contract, or any other way he sees fit. We believe that the latter is the stronger argument and, thus, have included such payments in contractor sources of capital.

Another controversy exists regarding whether bank float should be considered a part of contractor investment. Bank float is defined as the difference between the balance shown in the contractor's checkbook and the bank's records. Based on our study, it takes about 5 days for checks to clear

a contractor's bank account. The model assumes the contractor can use bank float on certain types of expenses. One view is that bank float is not necessarily used by contractors and therefore should be added to contractor financing. Another position is that bank float is available for use and, accordingly, should be considered as a separate financing source.

There are several reasons for the range in amounts of capital provided by the various sources of capital shown for the three contracts we studied, such as the mix of labor and material costs, the contractors' payment policies, and the stage of contract completion at the cutoff date of our study. Also, our study indicated that as a contract nears completion and deliveries are made, financing provided by profit increases and other contractor financing decreases.

In conclusion, the actual contract data used in our current study showed some cases in which a higher rate of contractor investment was involved than was indicated by the simulated cash-flow data discussed in our report of August 21, 1975. The revised data showed contract financing from contractor related sources varying from 22.8 to 32.0 percent of total capital requirements. Only a relative small part of this financing, however, had to be provided directly by the contractor. On the basis of the actual contract data we do not believe that any increase in the rate of progress payments is warranted.

We are sending copies of this report to the Chairman, Subcommittee on Federal Spending Practices, Efficiency and Open Government, Senate Committee on Government Operations; the Director, Office of Management and Budget; and the Secretary of Defense. Since this report may be of interest to the Cost Accounting Standards Board in its deliberations concerning the need for a standard dealing with contractor investment in working capital, we are also sending copies of the report to the Executive Secretary of the Board.

Sincerely yours,

Comptroller General
of the United States