to estimate the employment impacts of the process in two important defense industries. A concluding section summarizes the paper and points out some important data and research needs.

II. The Military Procurement Process and Some Implications

The discussion which follows briefly reviews the military procurement process and indicates the implications of this process for empirical research designed to estimate the economic effects of procurement actions.[2]

The process normally begins with the submission of the President's budget in January, on which congressional hearings are held. Later in the year, appropriations bills are passed, providing the Department of Defense with authority to spend. During the year the Defense Department incurs obligations. In the case of procurement, these are generally in the form of contracts with private industry. To complete the process, expenditures are made as the finished products are delivered.

Which stages in the procurement process are crucial for measuring impacts on output or employment? Subject to several qualifications discussed below it appears that the contract-letting, or obligations, stage is most significant. At this stage, the contractor adjusts employment and output as he takes steps to fill the order. As production is undertaken, inventories are increased. This is reflected in GNP.[3] Eventually, the product is completed and payment is received by the firm. An important implication of this description, for the case in which production and delivery requires rather a long time, is that the employment and income effects are felt prior to the expenditure—in some cases many months prior.

As indications that these leadtimes are significant, it might be noted that 27.8 percent of the 1960 total of procurement and research, development, test, and evaluation was negotiated in the category: "Technical or specialized supplier requiring substantial initial investment or extended period of preparation for manufacture" [20, p. 23]. Other evidence is reported by Weidenbaum [23, p. 11], who points out that the lag between ordering and production for rifles, destroyers, transport planes, bombers, and jet planes is two or more years. Empirical work of Ando and Brown [2] supports the view that obligations affect output. Their contribution will be discussed more fully below.

Several additional features of the defense industry and the procurement process complicate the above description. First, defense firms often submit proposals to the Defense Department describing projects which might be of interest to the Department. While a certain amount of this type of work is likely to be going on all the time, greater activity may take place in response to information from the Department of Defense regarding its view on national security needs. Information is made available to the defense industries in various ways,

[2] More detailed analysis of this process may be found in [5], [10], [16], [22], and [23].

[3] Conceptually, for national income accounting purposes, work in progress, on which progress payments have or have not been paid, should be included in inventories. Unfortunately, company accounting practices make it difficult for the national income accountants to do this since funds expended on such inventories are often reflected in accounts receivable, rather than in inventories. On the government side of the accounting, however, the amount called "government purchases of goods and services" is on a delivery basis. Progress payments paid during production do not appear as purchases until final delivery is made, at which time the total expended on the contract is recorded as purchases. The foregoing refers to equipment contracts; construction contracts are treated somewhat differently.