

Typically, we measure the benefits or effectiveness of our investments against some criterion of military need. For airlift and sealift investments, for example, the need is expressed in terms of the desired schedules for moving forces to where they may be needed. For tactical air investments, one way the need can be expressed is in terms of delivering ordnance to a target system, against expected opposition, in sufficient quantity to destroy a certain percentage of the targets. We set up tests of effectiveness in each mission area, using perhaps several different measures.

Deciding whether or not additional investments should be undertaken in a given mission area involves complex judgments about the value of the extra effectiveness relative to its cost. Such judgments involve questions both of how much is enough and of how soon do we want or need the capability.

In choosing among alternative ways of achieving a given level of effectiveness, however, formal analysis has an important role to play, and the proper use of discounting is an important part of the analysis. We are concerned to know which alternative will provide the desired effectiveness for the lowest total cost. Alternatively, we may be interested in knowing which of several equal cost alternatives gives us the most for our money. Again, the question arises as to whether costs in different years should be equally weighted and again the answer is no. We should not be indifferent between programs which involve high outlays today and programs the costs of which are spread more evenly in time. Because the differences in cost among the alternatives have an opportunity cost to the private economy, an appropriate interest rate should be charged in estimating total program costs in order for the system with the smallest opportunity cost to be chosen.

Many non-defense problems can be analyzed using cost-effectiveness methods. Though the judgments about whether the benefits or effectiveness are worth it are not easy to make judgments focused on the right questions and explicitly drawn issues are likely to lead to better decisions than faulty benefits calculations.

II. CURRENT DoD POLICIES ON THE USE OF DISCOUNT RATES

A. CURRENT PROCEDURES

Department of Defense Instruction 7041.3, dated December 19, 1966, and signed by the Assistant Secretary of Defense (Comptroller) provides specific procedures for evaluating proposed defense investment projects where the sole or primary justification for such projects is economic. Examples of the kinds of proposals to which this Instruction is applicable include, but need not be limited to, the following:

1. Repair vs. replace. (New procurement)
2. Refurbishment to reduce operating and/or maintenance costs.
3. Fuel conversion to reduce fuel costs.
4. Consolidation projects for warehouses, depots, and repair activities, to improve efficiency or reduce costs.
5. Modernization projects to mechanize, improve work flow and layout, and increase capacity which lead to a reduction in costs.
6. Material and supply handling projects to increase efficiency and capacity.
7. Acquisition of Automatic Data Processing Equipment (ADPE) to increase efficiency or reduce costs.

Note that each of these situations possesses the essential characteristics for an economic analysis: a commitment of resources with the expectation of receiving benefits (i.e., cost savings) over some future period of time. Further, these resources and their attendant benefits can be measured in dollar terms.

The concept of the discount rate used in the Instruction is as follows: A discount rate is management's evaluation of two factors associated with investment analysis.

1. The interest cost of the money.
2. The risk and/or the uncertainty associated with the proposed project and the estimates contained therein.

The benefits, or cost savings, expected to result from the investment are to be discounted at 10 percent. The costs are to be discounted at 5, 7 or 10 percent depending on how the project is financed. However, this Instruction is now in the process of revision and the multiple rate procedure will probably be discarded in favor of a uniform rate applied to both costs and benefits.

The Instruction puts the role of the cost-benefit analysis in perspective as follows: "Although an economic analysis is part of the information that a decision-maker should consider, it rarely provides the complete basis for decision.