tures—a principal concern of the Planning, Programing, and Budgeting (PPB) System. Since the introduction of that system to the nonmilitary side of the Government, the major Executive Departments and agencies, and the Bureau of the Budget in particular, have devoted much effort to improving the process by which Government resources are allocated to accomplish the various objectives of public policy. My remarks will be organized to try to set the problem of discouting in the context of the broader objectives of improving decisions about Government resource allocation. Recent discussions of PPB before this subcommittee and before the Senate Subcommittee on National Security and International Operations of the Government Operations Committee have emphasized that decisions about public expenditures should and do have a broader basis than formal, quantitative analysis. I know of no one concerned with the development of PPB who believes that a time will come when formal, quantitative analysis will or should completely determine decisions about public expenditures. Nevertheless, the need to develop such analysis is, I believe, among the most urgent requirements in order to improve the quality of Government.

Complexities in Evaluating Public Expenditures

The reasons for dwelling on the limitations of quantitative analysis are to be found at the starting point of PPB—the broad objectives of Government expenditure. PPB is intended to assure that every dollar taxed or borrowed and spent by the Government will return at least a dollar's value, but the determination of that value is often a more complex thing for public than for private expenditure. This arises from the complexity of the objectives of most government programs. The objectives of public programs affecting resource allocation can be classified as follows:

—The provision of public goods—that is, goods whose consumption by one individual does not reduce the amount available for consumption by another. Decisions about such goods have to be made collectively. Examples are deterrence of war and the preservation of scenic beauty.

—The redistribution of income to assist specific groups, such as the poor, the aged, the disadvantaged. Redistribution may be effected by the transfer of money income or by the provision of goods and services. An example of the first type is the public assistance program; food distribution programs are an example of the second.

—The elimination of spillover effects—situations where John Doe's actions may benefit or harm Richard Roe in ways that can be ignored by John Doe's decisions, as when he burns leaves upwind or deposits sewage upriver from his neighbor in the absence of appropriate charges or regulations.

—The management of publicly-owned resources, such as mineral lands, forests, waterways and so on, in a way that will insure their efficient use from the point of view of society.

—The removal of imperfections in the operation of the private market, or the alleviation of their effects. Examples are the use of public enterprise to provide a competitive standard where none would otherwise exist, and the provision of better information to consumers or producers where the market would otherwise work badly.

Unfortunately for simplicity in the evaluation of government programs, almost all of them have implications for more than one of the objectives discussed above. Public expenditures on education may produce transfers of income to the beneficiaries; it may also provide society a public good in the form of a better educated electorate, spillover benefits in terms of a reduction in the crime rate associated with increasing educational levels in the area where the beneficiaries live, and an improvement in the operation of the labor market as a result of increasing the information of private individuals about the relation between education and opportunity. Clearly not all these dimensions of the performance of our public education programs can be subjected to measurement in terms of dollars. The dollar yardstick for the measurement of benefits is relevant only where a private market for the goods or services does or coul exist. Since no private market can evaluate the political value of a better educated electorate, that element of the output of public education programs must be measured in non-dollar terms or must be considered qualitatively. This, as I shall discuss below, has important implications for the evaluation of public expenditures and for policy on discounting, in particular.

The evaluation of our manpower programs illustrates how multiple criteria can complicate the task of analysis. It would be easier to evaluate those pro-