

railroad investment goes much deeper than indicated by a simple contrast between "public" and "private" considerations. If railroads were experiencing the exuberant growth which characterizes highway or airport construction, many of the most glaring contrasts between railroad and other transport investment criteria would be greatly reduced. The problems of private ownership, of divided ownership, of obsolete physical capital, and often of obsolete balance sheets, combine to make the development of acceptable criteria for railroad investment a matter of deep concern to the Department of Transportation as well as to the railroads themselves.

In conclusion, I would like to say that we in the Department are in general agreement with those who support the discounting techniques as a part of our analytical process. We feel that the discount rates which we have used are probably too low and should be re-examined. But I would like to add that many of the problems which are encountered in analyzing transportation investment illustrate that you cannot solve the basic issues simply by changing the discount rate. The opportunity to nullify the effects of raising the discount rate by changing the consideration, the identification, or the evaluation of costs and benefits is very great. This has been illustrated particularly in the water resources area. So while we are in favor of moving in the direction of better discounting procedures, we do not want to lose sight of the problem of improving the overall quality of our analysis, the better identification of benefits, the better description of them, and the better quantification of them.

(The complete statement of Mr. Mackey follows:)

#### PREPARED STATEMENT BY CECIL MACKEY

My testimony today will touch only briefly on the standard framework of analysis which is normally employed to establish the case for discounting future costs and benefits and to determine a rational rate of discount. Instead it will emphasize the many unusual features of discounting transportation costs and benefits which complicate the forecasting chores of the Department of Transportation.

Standard analysis of discounting is concerned with one aspect or another of the general question: how much to invest? It is always concerned with investment, or disinvestment, because the whole point to the use of interest or discount rates is to obtain comparable present values for streams of costs and benefits which are expected to have different time-shapes. Specifically, for problems involving positive investment, at least some costs are expected to precede benefits. For individual projects, a standard question takes this form: given a flow of anticipated future benefits, should we incur costs now, or wait? If we decide not to wait, should we incur heavy costs now in order to gain lower costs in the future, or should we minimize present costs in return for heavier future outlays? More generally, this kind of analysis can be spread over many projects, to determine the optimum size for total investment budgets or the optimum mix for total investment programs.

The Department of Transportation obviously does not have responsibility for the total investment budget of the U.S. Government, although the Federal highway program is one of the larger single elements in this budget. We are not directly concerned with overall investment criteria in the sense that the Treasury, the Bureau of the Budget, or the Council of Economic Advisers would be. It does have important areas for potential investment which involve trade-offs between investment and operating expenses.

But the more important aspect of the use of investment criteria by the Department of Transportation, within its present statutory framework, is its inability to lay down uniform rules for methods of calculating future costs, future benefits, or appropriate rates of discount to convert these future costs and benefits into present values.