

grams require that different weights be given to payments for goods and services, transfer payments, and other broad categories. In fact, different weights may be required for differentiation among programs with the same types of expenditures. Quantitative measurement of Government programs is not easy—and it is beset with special complications in the case of programs concerned with human resources.

A conceptual complication, already noted, is the difficulty of distinguishing between expenditures for consumption and those for investment in human resources. Either private or public expenditures may be directed toward pure consumption, pure investment, or a mixture of these, and a separation is not easily made. Prof. Theodore W. Schultz has suggested that one approach may be to estimate human investment by its yield rather than by its cost:

While any capability produced by human investment becomes a part of the human agent and hence cannot be sold, it is nevertheless "in touch with the marketplace" by affecting the wages and salaries the human agent can earn. The resulting increase in earnings is the yield on the investment.¹³

Some analysts have noted that this technique ignores secondary benefits derived by other persons and by society at large—so-called spillover effects—and also omits from the calculation nonpecuniary and qualitative benefits and costs. Despite this insufficiency, this method of valuation has been used by Schultz and others in examining the relationships of returns to costs for such human-investment activities as higher education, on-the-job training, medical care and public health measures, and labor migration.¹⁴

Formal comparisons of estimated project costs with expected returns have long been standard prerequisites for river basin development programs of the Federal Government. Over the years, an extensive analytical and methodological literature on cost-benefit analyses for water resource projects has been produced. Official procedures and concepts have been standardized to a considerable extent. For some years they were subject to procedures and standards outlined in a Bureau of the Budget circular. This circular, however, was the basis for considerable contention, both as to substance and the propriety of its source. It was replaced in 1962 by a formal statement, approved by the President, spelling out policies and standards for the evaluation and review of plans for water and related land resource projects,

¹³ Schultz, "Investment in Human Capital," *American Economic Review*, vol. LI, March 1961, p. 8.

¹⁴ A few pertinent references may be cited; each contains other references:

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