

Actual resource projects are not free of risks, however. Where outputs are marketable, there is no assurance that the expected revenues will be collected; even in the case of nonmarketable outputs, such as recreation and flood control, there is no guarantee that the expected benefits will actually accrue. In the case of water resource projects, there are always the risks caused by meteorologic and hydrologic uncertainties. Yields on government securities do not reflect these risks, since the federal taxing power stands behind the bonds and any losses on projects will be paid out of taxes.

To discover a risk premium which reflects individual willingness to bear risks, we would need to estimate the cost of raising money for water resource projects that would be incurred by a public corporation unable to employ the taxing power to guarantee its securities. The cost of financing some of the purposes, such as navigation, electric power, and municipal water supply, would be similar to the cost incurred by private utilities, since the service and the risk is almost the same. These companies typically could raise capital at an average cost of 4.5 per cent in 1955,⁴⁴ which serves as a first approximation for these purposes. The financing of irrigation would, in part, depend upon the security of the repayment contracts and, in part, on the likelihood that the settlers would realize the projected benefits. Nonreimbursable purposes, such as flood control, for which there are no comparable private industries, are subject to the risk that benefits will not be fully realized. To impute risk premiums for these purposes, we would need to take account of the fact that in some instances, particularly in the case of flood control, the projects also serve to reduce risks—a factor which should lower the interest rate. We shall not venture an estimate. Suffice it to say that, taking the water resource program as a whole, the interest rate derived from these assumptions would be well above the pure rate of interest as measured by the long-term government bond rate, but would be far below the highest rates prevailing in the private economy.

ate School of Business Administration, Harvard University, 1953) especially Chapters 2, 4-7, 9, 10, and 17.

⁴⁴This assumes 50 per cent of the funds to come from bonds paying 3.22 per cent, 15 per cent from preferred stock paying 4.25 per cent, and 35 per cent from common stock with an earnings price ratio of 6.5 per cent. All figures are net of taxes. For a more detailed discussion of these figures see Chapter VII, Table 38.