Tax incentives, especially tax-rate reductions or accelerated depreciation, are often recommended as a useful instrument to stimulate entrepreneurial investment and risk-taking. Quite the opposite conclusions, however, are drawn from portfolio selection models: In the papers by Domar and Musgrave [4], Mossin [11], Stiglitz [19], and others, it is shown that a risk-averse investor will increase risky investments when the income tax rate is increased (some restrictions omitted) and will decrease risky investments when the tax rate is reduced.

The aim of this paper is to prove that the effects of tax incentives on risk-taking are ambiguous, if the real conditions given by the tax law are taken into account. Additionally, it is argued that the portfolio models hitherto used for analyzing the interrelations between taxation and risk-taking considerably overrate the investor's ability to decide according to the expected utility theorem (or its simplifications, such as the mean-variance rule).
THE INFLUENCE OF TAX INCENTIVES

TAX INCENTIVES AND RISK-TAKING

Assumptions and Definitions

The main results of this paper will be derived under the assumption that tax incentives lead to nonmarginal income variations. This approach seems to be more realistic than the standard assumptions of portfolio theory, for it is applicable in the case of indivisible physical investments and does not necessarily require the differentiability of the utility function. Additionally, simple nonmarginal examples may be expedient for convincing not only economic theorists, but managers and tax experts as well.

Therefore I only investigate the choice between a riskless and a risky investment program when there are only two states of the world of equal probability. In one state of the world (the “good” one) the risky investment leads to a higher income than the riskless one, whereas in the other state (the “bad” one) the income from the risky investment will be lower than the riskless income. Both investments are assumed to be indivisible. Prior to a tax incentive, the investor is supposed to be indifferent to the choice between the riskless and the risky investment.

If expected utility maximization is postulated as in this section, the assumptions of only two states of the world and of equal probability are harmless. The results are also applicable to the choice between two risky investments, if we come to agree on the measurement of “more risk.” The greater risk can be measured by the difference between the highest and the smallest income chance, their probabilities, and the number of states of the world. This will not be discussed here in detail.

Risk aversion is assumed throughout. Risk aversion implies diminishing marginal utility of income chances. It will be shown later why I refer to the expected utility of income “chances” and not to the commonly used expected utility of final wealth.

Diminishing marginal utility of income chances implies that the difference between the income of the risky investment in the “good” state of the world and the riskless income has to be greater than the difference between the riskless income and the income of the risky investment in the “bad” state of the world to make sure that the investor will be indifferent between the two investment opportunities. Such indifference is assumed here for the after-tax incomes of the risky and the riskless investments before a tax incentive is granted. The relation between the required income increment in the good state of the world and the given income diminution in the bad state of the world is called the investor’s