RISK AND RISK MANAGEMENT REVISITED
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Abstract

Investment decisions are regarded as choices among alternative probability distributions of returns. In our paper, first, a variety of optimal efficiency criteria will be considered and related to utility theory. Basic to this discussion is the conceptualization and interpretation of risk and the adequacy of models to reflect risk attitudes. In there, also attention will be paid to the significant difference between the problem of ascertaining the nature of the mean-risk relationship and the identification problem. We will expand on the α-t model (Fishburn [1977]) and the more general α-β-t model of Holthauser [1981], with risk being defined as downside risk. More specifically, the implications for risk management using derivatives (futures and options) is discussed.

A specific concern of this paper is the modeling of risk and its determinants. Starting from the general idea that security prices are responding to various forces (factors), the systematic part of risk can be seen as a composite concept. Under the assumption of a return generating process, a relationship between expected return and factor risks can be derived. In empirical research, the risk factors are usually selected ex cathedra or motivated by a present value model, like a bond valuation model or a dividend discount model. In most cases there is no unique and exhaustive set of factors. It will be discussed that the asset liability matching problem is an exception in this respect.

Finally, the problem of time-varying risk and risk premias will be discussed. In estimating hedge ratios, usually the return distribution is taken to be time-independent. We will discuss ARCH models and corresponding refinements in general, and more specifically, how they can be used to accommodate the problem of estimating non-stationary hedge ratios.

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